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ERRATA.

Owing to considerations of time it was found necessary to publish Mr. Hill-Tout's paper before the corrected proof of the author was received. In spite of all possible care in comparing the MS. with the proof, a large number of errata resulted. A list of these is given below, and at the same time an apology is offered to the author for their presence.

Page 127, par. 3, line 3, *for* conquerors *read* congeners.
„ 129, No. 26, *for* head of Lake *read* head or face of hake.
„ 137, line 2, „ tlṓgamug „ tlṓḳamuḳ.
„ 143, „ 2, „ paternal „ fraternal.
„ 150, „ 4, „ S'ptákwᴇtl „ S'p'tákwᴇtl.

Page 154, line 9, *for* mētlá́s *read* smētlá́s.
„ 157, „ 19, „ ḿētcak-e *read* ḿētcak-ē.
„ 157, last line but one, *delete* · *after* tcḗōq.
„ 158, line 5, *for* mícitc *read* mí'citc.
„ „ „ 6, „ Ec-mititc „ ec-mícitc.
„ „ „ 15 and 16, *for* kānēm „ kānḗm.
„ „ „ par. 3, line 2, *for* LīlūEtṓl, LīlūEt *read* Lil.
„ 159, under consonants *insert* "z as in English."
„ 161, line 8 from bottom, *for* wElt-am *read* -wÉlt-am.
„ 164, „ 6, *theirs for* tcū-ē *read* tcū-ḗ.
„ 164, § 5, line 13 from bottom, delete first hyphen in tṓ-mōtl-ac.
„ 166, last line but 10, *for* 'nk·'umak'umEp *read* 'nk·'úmak·umEp.
„ 167, under Streams, etc., line 10 from bottom, *for* wkE *read* kwE.
„ 167, ordinals, *sixth*, delete hyphen.
„ 169, line 28, *for* both over "there" *read* both "there" or "yonder."
„ 170, *for* Interrogative Verbs *read* Intransitive Verbs.
„ 172, line 6, delete · after plan.
„ „ „ 10, „ hyphen in nEˢ-qat·l.
„ „ „ 19, *for* cíkÉn-Ém *read* cíkEn-Ĕm.
„ „ Iterative forms. Put hyphen after wā in each case.
„ 173, line 8, *read* cik'nétac.
„ „ „ 22, *for* cikálEp *read* cikstōmkálap.
„ „ last two lines *for* . . . ō' *read* . . . ṓ.
„ 175, line 13, *for* knōq *read* kwōq.
„ „ „ 16, „ hutc'ma *read* qutc'ma.
„ 176, „ 22, „ *ne read nē.*
„ „ „ 32, „ -En wā *read* En-wā.
„ „ line five from bottom: *for* tcāk· . . . *read* tcūk· . . .
„ 177, line 12, *for* zōke . . . *read* zṓke . . .
„ „ 12 from end, *for* n'zEhāka *read* n'zEhā́ka.
„ „ last but one, *for* ro-itc *read* rṓyitc.
„ 178, line 1, *for* nḗ-tlōs *read* nḗ-tlō.
„ „ „ 9, „ tzaqēlā́ca *read* tzaqālā́ca.
„ „ „ 11, „ tcūnamtcanac *read* tcū́namtcánac.
„ „ „ 13, „ mṓlāc *read* mṓtac.
„ „ „ 15, „ skūkuméil *read* skūkuméit.
„ „ „ 35, „ Elt . . . *read* Etl.
„ 179, „ 1, „ te *read* tē.
„ „ „ 1, „ Skaiyam *read* Skaiyām.
„ „ „ 7, „ rōit-ē *read* rṓit-ē.
„ „ „ 9, „ skīlámqa *read* skílámqa.
„ „ „ 15, „ cickwōza „ cickwṓza.
„ „ „ 17, „ Ti *read* Tī.
„ „ „ 23, „ ḗcilkEna *read* ḗcitkEna.
„ „ „ 29, „ pā́m'cEm atl *read* pā́m'cEmatl.
„ „ last but one, *for* atsuqEnac „ átsuqEnac.
„ 180, line 7, *for* ku'mk'amaza *read* k'umk'ámaza.
„ „ „ 17, „ tcEalā́na *read* tcE alā́na.
„ „ „ „ „ lána *read* alána.

Page 180, line 29, *for* nē tlōs *read* nē-tlōs.
„ „ „ „ „ zwotnᴇm *read* zwótnᴇm.
„ „ „ „ „ ᴇcmīcitc „ ᴇcmī′citc.
„ „ „ 33, „ aith *read* aitl.
„ „ „ „ „ . . .’n-ētāc *read* . . . ’n-ḗtāc.
„ „ „ 35, „ mícitc *read* mī′citc.
„ „ „ last but one, *for* Skaíyam *read* Skaīyám.
„ 181, „ 5, *for* skwā́tcitca *read* skwā́tcītca.
„ „ „ 5, „ tᴇkokaūa *read* tᴇ kokaūa.
„ „ „ 11, „ ḗcitken-ēha *read* ēcit ken-ḗha.
„ „ „ 21, „ Ama *read* Ā′ma.
„ „ „ 29, „ tcípᴇnac *read* tcī′pᴇnac.
„ „ „ „ „ kítenac „ kī′tenac.
„ „ last but one, *for* cíckwōzca *read* cī′ckwōzca.
„ 182, line 3, *for* cíla *read* cī′la.
„ „ „ 11, „ mā́il-towēt *read* mā́it-tōwēt.
„ „ last but four, *for* Oōaic „ Qōaic.
„ 183, line 21, *for* cyukīyā́ktca „ oyu . . .
„ „ „ „ „ Untoō *read* Untoṓ.
„ „ „ „ „ Āma „ Ā′ma.
„ „ „ 25, „ nē-kutla *read* nḗ-kútla.
„ „ „ last but one *for* péᴇkem *read* péᴇkem.
„ „ „ „ „ ā́lsuqᴇnac *read* ā́tsuqᴇnac.
„ 184, line 3, *for* ᴇnā́n’wic *read* ᴇnā́n’wac.
„ „ „ 3, „ cyukīyā́ktca *read* oyu . . .
„ 184, „ 14, *delete* by.
„ „ „ 19, *for* rípaca *read* rī′paca.
„ „ „ 25, „ lílina „ li′lina.
„ „ „ 27, „ tcūntcas *read* tcū́ntcas.
„ „ „ 31, „ tcíoqac „ tcē′oqac.
„ „ „ 31, „ ēha-tō „ ḗha-tō.
„ 185, „ 7, „ kwānac „ kwā́nac
„ „ „ 9, „ Qaítlcᴇc „ Qaī′tlcᴇc.
„ „ „ 19, „ cickwṓzca „ cíckwōzca.
„ „ „ 21, „ tcítuq „ tcítuꞯ.
„ 189, „ 16 from end, *for* tlketl *read* tlkatl.
„ „ „ 14 „ „ kwṓcū „ kwā́cū.
„ „ „ 12 „ „ qoāz „ Qoāz.
„ „ „ 6 „ „ etl-wō· . „ etl-wō-.
„ 190, „ 1, *for* stḗtlo *read* stlḗtlo.
„ „ „ 3, „ zehōctca *read* zehṓctca.
„ „ „ 5, „ k’wok.. *read* k·wok . .
„ „ „ 13, „ kwakwalūt *read* kwakwalū́t.
„ „ „ 15, „ . . . pālōcᴇc „ pā́lōcᴇc.
„ „ „ 17, „ kwalût- . . . „ kwalû́t- . . .
„ „ „ 21, „ hṓi-cu „ hṓi-cū.
„ 191, „ 9, „ tcᴇátᴇméᴇꞯa „ tcᴇā́ tᴇméᴇꞯa.
„ „ „ 15, „ Ama *read* Ā́ma and insert kwà after Ā́ma.
„ 200, „ 9, „ slikᴇmáiwc *read* tlikᴇmáuwac.

Page 206, bottom of page, *for* kā́tcih *read* kā́tcik.
„ „ „ „ cíckwāz „ cíckwōz.
„ 207, line 4, *for* 'ntcíckwāz *read* 'ncíckwōz.
„ 208, 1st col., line 3, *for* natclᴇkēn *read* nátclᴇkēn.
„ „ „ „ 26, „ k·ōqwēᴇq ... *read* k·ōqwḗᴇq.
„ „ „ „ 27, „ tcuk·ᵘlén mēakatl *read* tcuk·ᵘléᴇm mḗakatl.
„ „ 2nd col., „ 6 from bottom delete (on a mat).
„ 209, „ „ 9, *for* t·lukt·lct·luk *read* t·lukt·let·luk.
„ „ „ „ 15, „ tcṓkezuks „ tcṓkᴇzuks.
„ „ „ „ 16, „ tcᴇtū́ „ tcᴇtcū́.
„ 210, „ „ 10, „ n'anawoc- „ n'anawac.
„ „ 1st col., „ 24, „ kṓtzun *read* kṓtzūn.
„ „ 2nd col., „ 12, *read* 'nmḗkēl ...
„ „ „ „ 7 from bottom *read* 'nk·lā́k·amin.
„ 211, 1st col., „ 11, *for* from *read* cf.
„ „ 2nd col., „ 18 from bottom *read* nuk·ᵘnek·wāz.
„ 212, 1st col., „ 20, *for* dine *read* dive.
„ „ „ „ 3 from bottom *for* tᴇmḗúq *read* temḗuq.
„ „ 2nd col., „ 5, *for* tcūk· *read* tcūkᵘ.
„ „ „ „ 8, „ tᴇm tā́íit *read* tᴇm täít.
„ 213, „ „ 14, „ kēᴇkᴇlōtl „ kē'ᴇkᴇlōtl.
„ 214, 1st col., „ 2, „ skaúyūq „ skaíyuq.
„ „ 2nd col., „ 10, „ Qékúsᴇmin *read* Qékwᴇmin.
„ 215, 1st col., „ 10, *read* p'ān't-tlkan.
„ 216, „ „ last line *for* ctlūm *read* clūm.
„ „ 2nd col., „ 23, „ „ „
„ 217, „ „ 5 from bottom, *for* tzíztyuzkᴇt *read* tzíztzuzkᴇt.
„ 218, „ „ 10, place bracket before nḗū.

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Athens... Ephemeris Archaiologikè.
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JOURNAL

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ANNUAL GENERAL MEETING.

JANUARY 24TH, 1905.

H. BALFOUR, M.A., *President, in the Chair.*

The Minutes of the last Annual General Meeting were read and confirmed.

The PRESIDENT declared the ballot open, and appointed, as Scrutineers, Mr. F. BENNETT-GOLDNEY and Mr. T. V. HOLMES.

The SECRETARY read the Report of the Council for the year 1904 (p. 2).

Prof. GOWLAND moved, and Mr. C. H. READ seconded the adoption of the Report.

Dr. F. C. SHRUBSALL moved as an amendment that the Report of the Council be accepted with the exception of the following words in the paragraph dealing with *Man*, viz., from "that having" to "very shortly."

Seconded by Dr. E. G. RAVENSTEIN.

There also spoke: Dr. ARTHUR EVANS, Mr. E. N. FALLAIZE, Mr. E. W. BRABROOK, the SECRETARY, Dr. J. G. GARSON, the TREASURER, Mr. W. S. ROUTLEDGE. Sir RICHARD TEMPLE, Sir HARRY JOHNSTON, The Honourable D. HERVEY and Prof. W. GOWLAND. Dr. SHRUBSALL replied.

On a division there voted: for the amendment, six; against, twenty-seven. The amendment was therefore lost.

The original motion was then put and carried.

The TREASURER presented his Report for the year 1904 (p. 8).

On the motion of Mr. A. L. LEWIS, seconded by Dr. SHRUBSALL, the Report was adopted.

Dr. GARSON moved and Professor GOWLAND seconded that the President's address be taken at a subsequent meeting, owing to the lateness of the hour. In reply, the President said that he did not propose to deliver his address, but that he was quite willing that it should be printed in the *Journal* (p. 13).

The SCRUTINEERS handed in their Report, and the following were declared to be duly elected as Officers and Council for the year 1905:—

President.—Prof. W Gowland, F.S.A.

Vice-Presidents.

E. S. Hartland, Esq., F.S.A.
A. L. Lewis, Esq., F.C.A.
R. B. Martin, Esq., M.P.

Hon. Secretary.—T. A. Joyce, Esq., M.A.

Hon. Treasurer.—J. Gray, Esq., B.Sc.

Council.

Prof. D. J. Cunningham, M.D., D.C.L., F.R.S.
M. L. Dames, Esq.
W. L. H. Duckworth, Esq., M.A.
E. N. Fallaize, Esq., B.A.
J. G. Garson, Esq., M.D.
Baron A. von Hügel, M.A.
Sir H. H. Johnston, G.C.M.G., K.C.B.
A. Keith, Esq., M.D.
C. S. Myers, Esq., M.D.
R. H. Pye, Esq.
D. Randall-MacIver, Esq., M.A.
S. H. Ray, Esq.
Prof. W. Ridgeway, M.A., F.B.A.
W. H. R. Rivers, Esq., M.D.
F. C. Shrubsall, Esq., M.D.
W. W. Skeat, Esq., M.A.
C. G. Seligmann, Esq., M.B.
Sir R. C. Temple, Bart., C.I.E.
N. W. Thomas, Esq., M.A.
Prof. Arthur Thomson, M.A., M.B.

Prof. GOWLAND was then installed as President.

On the motion of Mr. READ, seconded by Dr. GARSON, a vote of thanks was passed to the outgoing Councillors.

Prof. GOWLAND returned thanks for his election, and proposed a vote of thanks to the outgoing President and to the Officers.

A vote of thanks to the Scrutineers was passed on the motion of the SECRETARY.

REPORT OF THE COUNCIL FOR THE YEAR 1904.

The Council is able to report another year of steady progress, the number of new Fellows and the net increase being greater than for any year since 1898.

Below in tabular form are shown the numerical gains and losses of the Institute:—

	Honorary Fellows.	Corresponding Fellows.	Local Correspondents.	Ordinary Members.		Total Ordinary	Total Membership.
				Compounding.	Subscribing		
1 Jan., 1904 ...	46	9	19	74	266	340	414
Less	− 2		− 1		− 15	− 18	− 18
Since elected ...			10	4	32	46	46
Since transferred				1	− 1		
1 Jan., 1905 ...	44	9	28	78	283	361	442

Among the losses which the Council have to deplore are:—Major-General Forlong, F.R.G.S., F.R.S.E., Mr. Taylor Hancock, The Rev. W. W. La Barte, Prof. G. Niccolucci and the Marquis de Nadailhac.

The Marquis de Nadailhac had long been an Honorary Fellow of the Institute. Embarked on a political career, he soon abandoned it in order to devote himself wholly to the study of philosophy and anthropology. His numerous works on the prehistory of Europe and America are too well known to require mention: his loss will be deeply regretted by all students of prehistoric anthropology.

Prof. Niccolucci, another Honorary Fellow of the Institute, was also the author of many papers on the prehistoric archæology of Europe.

Anthropology has also to regret the loss during the past year of the following workers and pioneers in unexplored fields, who, although they were not actually Fellows of the Institute, have done much to further the interests of the science which the Institute represents in this country:—

Mr. R. M. W. Swan was well known for his researches in Mashonaland. In 1891, he accompanied Mr. Theodore Bent, and undertook the topographical part of the work, the maps and plans of the ruined cities being due to his researches. Shortly before his death, which took place in Malacca, he contributed to the Institute a paper on Stone Implements from Pahang, which appeared in *Man*.

Dr. Max Bartels was best known as the Editor of Ploss' *Das Weib*. He also published an important work on the Medicine of primitive people.

Dr. Emil Schlagintweit died on the 30th October at the age of 69. His fame rested chiefly on his two works, *Buddhism in Tibet* and *Indien in Wort u. Bild*.

Of Sir Henry Morton Stanley, G.C.B., etc., it is unnecessary to say much here; at the same time, the magnificent work which he accomplished in the opening up of vast tracts of hitherto entirely unknown lands in Central Africa, cannot be passed over without mention.

Karl Ujfalvy, renowned for his exploration in Central Asia, died suddenly at the beginning of February. His largest work was his *Expedition Scientifique Française,* published in six volumes. He was also the author of other works too numerous to mention. Anthropology lost his services twenty years ago, when an affection of the eyes led him to transfer his activities to the field of the history of art.

Dr. Alphonse Stübel earned the gratitude of all anthropologists by his magnificent works on Peru and other portions of South America. His *Kultur u. Industrie,* published in 1889, was a model of research, and anthropologists will look forward to the publication of the material which was not enshrined in his monumental works.

Friedrich Ratzel was one of the many distinguished scientists who began life in a humble sphere. He served as a volunteer in the Franco-German war, and received a serious wound at Auxerre. Anthropologists know him best as the author of *Anthropogeographie,* an important work on the influence of environment, and his less ambitious *Völkerkunde.*

MEETINGS.

During the year ending 31st December, 1904, eleven ordinary meetings were held, in addition to one special meeting, the Huxley Memorial Lecture. The Council note with satisfaction an increase in the average attendance.

HUXLEY MEMORIAL LECTURE.

The fifth Huxley Memorial Lecture was delivered on October 7th, 1904, in the Lecture Theatre of Burlington House, by kind permission of the First Commissioner of Works. The lecturer was Dr. J. Deniker, President of the Anthropological Society of Paris, and an Honorary Fellow of the Institute. The title of the lecture was "Les Six Races composant la Population actuelle de l'Europe"; it was illustrated with numerous lantern slides. At the conclusion of the discourse the Lecturer was presented with the Institute's Huxley Memorial Medal by the President, who, in a complimentary speech, alluded to the fact that Dr. Deniker was the first Honorary Fellow to receive the distinction.

PUBLICATIONS.

With regard to publications, two half-yearly parts of the *Journal* have been published, viz.:—Vol. XXXIII, 2 (July—December, 1903), and Vol. XXXIV, 1 (January—June, 1904). Of the former, 93 copies have been sold, as against 70 of the first part published in the previous year. The sales of the latter, however, show a considerable decrease; this decrease the Council would attribute to the fact that, owing to the regrettable delay, for which they were not responsible, in the publication of the former, the latter was issued only six weeks subsequently and in the vacation, thereby to a certain extent escaping the notice of the public.

With regard to *Man*, twelve monthly parts have been issued, and a perceptible increase in the sales to the public is evidence of a proportionate increase of popular interest in Anthropology. At the same time, the sales to Fellows are so few—numbering, in fact, less than half those of 1902, after which the option of receiving their free copy monthly, was granted to Fellows—that having regard to the present financial position of the Institute, the Council make the following proposal:— "That for the reasons given by the treasurer for the future, *Man* be not considered as in any sense a part of the *Journal* of the Institute. By this means, it will be possible to make a charge to Fellows of 6*s*. yearly for *Man*, in order partially to meet the annual deficit. The Council would only regard this as a temporary measure, and have every hope that the original arrangement of free distribution may be re-established very shortly."

LIBRARY.

The accessions to the Library show an increase on the previous year, and the number of works, presented by publishers for review, still testifies to the value of *Man*, as a means of making additions to the Institute's Library. The number of periodicals received in exchange for the *Journal* or *Man*, has been increased by nine units, all of them foreign publications.

EXTERNAL.

The important subject of physical deterioration has attracted widespread notice during the past year. An Interdepartmental Committee appointed by the Lord President of the Council issued a valuable report on the subject, and the matter was also discussed at the British Association. In connection with this question, the Council have now prepared a memorial to the Marquess of Londonderry, recommending the organisation of an Anthropometric Survey and the appointment of an Advisory Committee and making other suggestions.

ANTHROPOLOGICAL INSTITUTE OF

Receipts and Payments

RECEIPTS.	£	s.	d.	£	s.	d.	£	s.	d.
Balances in hand, 1st January, 1904 :—									
Cash at Bank	54	16	8						
Petty Cash	9	6	8						
				64	3	4			
Less Balances owed as per 1903 Account :—									
Library Fund	9	17	2						
"Anthropological Notes and Queries"	36	17	8						
				46	14	10			
							17	8	6
Subscriptions :—									
Four Life Subscriptions at £21				84	0	0			
Ordinary for the year 1904				451	10	0			
For the year 1905 in advance				33	10	0			
Arrears				25	6	0			
							594	6	0
Sale of Journals				104	9	4			
Sale of Huxley Lectures				1	11	3			
							106	0	7
Advertisements in *Journal*							4	4	0
"Man"							42	6	8
Dividends for one year on Metropolitan Consolidated 3½ per cent. Stock (less Income Tax)							10	0	2
Library Fund :—									
Balance, 1st January, 1904, as above				9	17	2			
Grant to (as per contra)				10	0	0			
				19	17	2			
Binding	5	5	0						
Sundries (Petty Cash)		16	1						
				6	1	1			
							13	16	1
"Anthropological Notes and Queries" :—									
Balance in hand, 1st January, 1904, as above				36	17	8			
Received during year				5	12	6			
							42	10	2
Hobley's "Uganda" :—									
Balance as per 1903 account							31	12	7
Sundries								10	0
							£862	14	9

23rd January, 1905.

GREAT BRITAIN AND IRELAND.

for the Year 1904.

PAYMENTS.	£	*s.*	*d.*	£	*s.*	*d.*
Rent (including Coal, Gas, and Electric Light for one year to Michaelmas, 1904)				135	0	0
Journal, Vol. XXXIII, Jan.–Dec., 1903	109	0	5			
Less refund for Blocks	1	0	0			
				108	0	5
Advertising				4	15	9½
"Man" for 1904				251	7	5
Salaries				102	14	6
Housekeeper :—						
Cleaning rooms, etc.				15	12	6
Stamps and Parcels				39	8	0½
Printing, Stationery and Typewriting				8	1	5
Lantern Materials				1	2	11
Huxley Medal and Lecture (including plates)				25	9	6
Grant to Library				10	0	0
Hobley's "Uganda" :—						
Balance (as per contra)	31	12	7			
Less received in 1904	2	0	6			
				29	12	1
Insurance				1	10	0
Travelling Expenses				1	4	0
Sundries				6	4	2
Balance at Bank				118	3	8
Petty Cash in Hand				4	8	4
				£862	14	9

Examined and found correct,

(Signed) RANDALL H. PYE, HENRY N. HUTCHINSON, } *Auditors.*

TREASURER'S REPORT FOR THE YEAR 1904.

On the 31st December, 1904, the assets of the Institute were as follows:—

	£	s.	d.	£	s.	d.
Assets (not immediately realisable):—						
Books in Library, Publications, Furniture, etc., as per estimate of last year				855	0	0
Realisable Assets:—						
£300 Metropolitan Consolidated 3½ per cent. Stock	318	0	0			
Arrears of subscriptions, £178 10*s.* 0*d.* valued at	40	0	0			
Balance at Bank	118	3	8			
„ of Petty Cash	4	8	4			
				480	12	0
Total Assets				£1,335	12	0

Against which there were liabilities consisting of:—

	£	s.	d.	£	s.	d.
Anthropological *Notes and Queries* ...	42	10	2			
Harrison's account for *Journal*... ...	168	4	9			
Library Fund	13	16	1			
				224	11	0

Leaving a surplus, if all our property were realised, of £1,111 1 0

but not allowing anything for the *Journal* for 1904, now in the press, nor for *Man* for December, 1904, nor for unexpended life subscriptions.

But as we do not at present contemplate selling our Library or other such assets, it is desirable to know what is the value of our immediately realisable assets:

	£	s.	d.
these amount to	480	12	0
less	224	11	0
that is	256	1	0

We have, therefore, a Reserve Fund of say £256 upon which we can draw to meet a temporary emergency, but it would not be advisable, I think, to expend much of this Reserve to meet deficits in our Income, because we must keep a sum of at least £200 to meet unexpected expenditure such as would be involved in our having to move into other quarters.

Besides the liabilities included in the above list, the Institute ought, in my opinion, to consider itself liable for the cost of the *Journal* for 1904, because though the accounts for that volume of the *Journal* are not usually rendered at the end of the year, part of the *Journal* is published and the remainder is in the press. The cost of the *Journal* for 1903 was very nearly £300, and we may estimate the cost of the *Journal* for 1904 at this amount.

Man for December was also unpaid at the end of 1904, and this must be taken as an additional liability of, say, £17. There is a still further liability for the unexpended part of life subscriptions, which I estimate as being at the present time £400.

Summing up these additional liabilities we have:—

	£	*s.*	*d.*
Journal (1904)	300	0	0
Man (December, 1904)	17	0	0
Unexpended life subscriptions	400	0	0
Total	£717	0	0
Our available Reserve Fund is (as above)	256	0	0
so that our Reserve Fund falls short of ideal requirements by	461	0	0

It is evident, therefore, that in order to bring the Institute into a perfectly sound financial position, our present Reserve Fund should be increased by about £460. This addition to our Reserve Fund is not urgently required, but future surpluses, when we get them, should be drawn upon to bring our Reserve Fund up to the ideal standard.

LIFE SUBSCRIPTIONS.

I propose to introduce a change in the practice with reference to the expenditure of life subscriptions. It has hitherto been the practice to regard life subscriptions as part of the income for the year in they were received. This is evidently unfair to Life Members because it weakens the guarantee that they will enjoy the rights of members for life. This will be evident if we take the extreme case of all the ordinary Members becoming Life Members. According to the old practice the whole of their life subscriptions would be spent in the first year of their membership, the affairs of the Institute would have to be wound up, and they would be in no better position than the annual subscriber who had paid only one-tenth of their subscription. The equitable method of dealing with life subscriptions appears to me to be to spread their expenditure over a period representing the average term of membership of a Life Member. I find that the average term in the Institute, at present, of an annual subscriber, is about eleven years, and of a Life Member twenty-three years. The life subscription ought, therefore, to be spent at about half the rate of the ordinary subscriptions. I propose, therefore, in future to spend life subscriptions at the rate of one pound per annum. This will mean that there must be always a certain fund in hand representing the unexpended portion of life subscriptions. It will form part of the Reserve Fund of the Institute, and may be borrowed from, in case of necessity, on condition that it is made up to the standard value at the earliest opportunity. I have estimated that at present the Fund should amount to about £400, and I have accordingly entered that sum among the liabilities of the Institute.

THE FINANCIAL POSITION OF THE INSTITUTE.

The financial position of the Institute is in some respects more prosperous than at any other period in its history. The income from subscriptions is the highest on record, being £50 higher than the previous record in 1902. There were four life subscriptions in 1904 against five in 1902, which makes the comparison still more in favour of 1904. There has been a fairly steady increase in our income from subscriptions from £450 in 1900 to £594 in 1904.

Notwithstanding this highly satisfactory increase of our principal source of income, there has been an excess of expenditure over income in every year of the 1900-04 period, except in 1902, when there was a small surplus of £20. But this surplus was only obtained by reckoning five life subscriptions as part of the revenue for that year. If the life subscriptions had been expended according to the more equitable method I have already explained, we should have had a considerable deficit every year in the last five years. The principal cause of these deficits appears to have been the great increase in the cost of the annual publications, arising in the first place from the uncontrolled increase in the size of the *Journal*, which in 1902 contained 150 pages more than in 1900, and in 1903, eighty-seven more pages; and, in the second place, from the conversion of the *Miscellanea* of the *Journal* in 1901 into a separate monthly periodical (*Man*) the bulk of which at the end of the year was about half that of the *Journal*. No doubt this great improvement in the size of our annual publications was an advance in the right direction, if the expenditure on these publications had been kept within the limits of our income, but it evidently increased at a greater rate than we could afford, as is shown by our increasing deficits and by the fact that the fixed charges of the Institute, such as Rent, Salaries, etc., have been considerably reduced (from £396 to £347) within the period in question.

The debt arising from these accumulating deficits was paid off up to the end of 1903 by spending £318 of a Reserve Fund of £600 Metropolitan Consolidated Stock held by the Institute, leaving a balance of about £60 at the beginning of 1904. Assuming that the *Journal* for 1903 had been paid for at the end of 1904, we should have had a balance on the wrong side of the account of about £50. We have also to remember that our income contained £84 from life subscriptions, £80 of which has to be transferred to the Reserve Fund. The total excess of expenditure over income in 1904 is therefore:—

	£
Balance, January 1st, 1904	60
Deficit at the end of 1904	50
Life subscriptions transferred to Reserve Fund but for the present borrowed	80
Total	£190

It is necessary now to estimate what will be the probable deficit in 1905. Assuming for the moment that the income in 1905 remains the same as in 1904, *i.e.*, £676; the expenditure may be estimated as:

	£
Fixed charges	360
Journal, 1904	300
Man, 1905	200
Total	£860
Now subtract:	
Estimated income	676
and the deficit is	184
If we add on to this, *Man* for December, 1904	17
We get a deficit of	£201

on the assumption that the *Journal* is paid up to the end of 1904, and *Man* to the end of 1905.

To meet this estimated deficit in 1905 of £200 is the problem which lies immediately before the Institute. No amount of discussion of the past financial history of the Institute will, in my opinion, assist us in its solution, and the settlement of our difficulties would, I think, be very much simplified if the Members who differ about the past financial history of the Institute would take this view of the case.

In the first place our income in 1905, from twenty extra annual subscribers, will be about £40 greater. This reduces the deficit to £160. In the second place, the Council have decided to reduce the cost of production of the *Journal* and *Man* to £400, which means a reduction on the cost of those publications for 1903, of about £100. This reduces the deficit to £60. To meet this remaining sum, the Council, subject to the approval of the Annual Meeting, propose to ask Members to pay for their copies of *Man*. If 200 Members pay for *Man*, this would bring in £60. At present, I believe, only about eighty have accepted the new arrangement, but many, no doubt, are waiting for the decision of the Annual Meeting on this question.

There is strong opposition among certain members to paying for *Man*, and it may be well to place before the Meeting, some of the alternatives.

1. By reducing the cost of the *Journal* and *Man* by £100, and presenting *Man* gratis to members as at present, it would take about three years to make income equal to expenditure, if we assume an increase of £33 in income every year.

The debt accumulated at the end of that period would be £150. This would take two to three more years to pay off; so that altogether, it would take five to six years to get into a satisfactory financial condition. As the same condition would be reached, (if *Man* was paid for) in two to three years, we delay the financial recovery of the Institute by two to three years by declining to pay for *Man*.

2. The Institute might abandon *Man*. This would mean a saving of £100 to £120. The remaining difference of £100 to £80, between income and expenditure, would take three years to disappear, and an additional three years would be required to pay off the debt of £150. There is practically no advantage financially in this over the first alternative.

For other reasons I hope the Institute will not entertain the idea of giving up the publication of *Man*. Besides its great value to the Fellows, it is an excellent means of spreading the knowledge of anthropology among the public outside the Institute, and thus helps to increase the membership of the Institute.

3. To let the *Journal* and *Man* remain as they are will, I believe, appear to most Fellows to be out of the question. Even with a steady increase per annum of thirty members, it would take six years to equalise income with expenditure, and as many more to pay off the accumulated debt. This would be far too risky an undertaking for any prudent business man to undertake, and still more so for a Scientific Institute.

4. Another alternative would be to raise the annual subscriptions by 6*s*. I should have no objection to this proposal, except that Life Members would escape the additional levy, and the increased subscription might have a deterrent effect on prospective members.

The proposal to ask members to pay for *Man* is not without precedent in other Scientific Societies. For example, I understand that the Physical Society and the Institution of Electrical Engineers ask their members to pay for an extra periodical publication called *Science Abstracts*.

I do not think that asking members to pay for *Man*, would deter prospective members from joining the Institute, so much as an increased subscription would, because the extra payment in the former case is optional.

We must not forget that the object for which this Association was established was the Promotion of the study of the Science of Man. Good publications are an excellent means conducive to the attainment of that object, but not the only means. I do not admit, as has been contended by certain of our members, that good publications are the only means of attracting new members to the Institute. Many new members join the Institute who have never seen our publications, but are influenced by their interest in Anthropology, and are proud to become Fellows of the leading Institute in the British Empire, for the study of that Science. I think therefore, that it would be no loss to the Institute to reduce its expenditure on publications, and to ask its members to contribute for an extra publication such as *Man*.

J. GRAY, *Honorary Treasurer*.

PRESIDENT'S ADDRESS.

IN resigning to my successor the presidency of the Institute, to which you were good enough to re-elect me for a second year of office at the last Annual Meeting, it is my privilege to inflict myself upon you in a brief address, and to ask your indulgence whilst I offer a few remarks, mainly of a retrospective character.

Before finally being relegated to that special shelf which is reserved for past-presidents—to a position which, however, involves no break in one's official connection with the Council, inasmuch as past-presidents are privileged to rank as permanent vice-presidents—I wish first of all to express my sincerest thanks to the Council and Fellows of the Institute, for the very great honour which was conferred upon me two years ago, when I was elected to occupy the chair of this important Society. To express adequately my sense of obligation, is quite beyond my powers, but the reality and strength of my appreciation is in no way impaired by the inexpressiveness of my pen. In the next place, I wish to thank most heartily and emphatically my colleagues on the Council, and especially the Treasurer, Secretary, and Assistant-Secretary—upon whom the bulk of the work of the Institute falls—for their unfailing good fellowship and courtesy towards me, and for the cordial manner in which they have throughout co-operated with me in conducting the Institute's affairs. Co-operated is, perhaps, hardly the suitable term for me to use, since I should rather admit that they have done all the work, while I have merely "done the rest." I have further to express my personal thanks to Mr. Fallaize for the help which he has so readily given in the matter of bringing out the *Journal*. I feel that I have been singularly fortunate in my colleagues, and only regret that I should have been unable to repay their kindness by being of equal use to them.

I am happy indeed to be able to look back to two years of general progress both in Anthropology at large, and in the affairs of the Institute. Many papers of high interest and ethnological value have been presented to us, the greater number of which adorn the pages of our *Journal*, as a permanent record of the scientific activity of the Institute, and as a sign of the growing interest in the study of Man. There have been numerous exhibitions of ethnological objects and collections of specimens from time to time, and I personally feel that this is a feature which should in every way be encouraged at our evening meetings. I am convinced that the exhibition of actual objects, whether as illustrations to a formal paper, or as nuclei around which informal discussions may develop, has a stimulating effect in developing a keen interest in ethnology. The specimens have the advantage of being more convincing than pictures, and of remaining in view throughout the evening, leaving a lasting impression, as contrasted with the staccato and ephemeral impressions derived from rapidly changing lantern slides, useful and effective though the latter be. At the same time, I recognise that the exhibition of specimens upon at all a large scale, involves much trouble and even anxiety for the exhibitor, to whom we should feel correspondingly indebted.

Every effort has been made to maintain the high quality of the *Journal* and of *Man*, the effective maintenance of the publications being regarded by the Council, and, I believe, by all the Fellows, as being of the utmost importance, and, in fact, as constituting the first duty of the Institute. With this object in view, the finances have been subjected to severe scrutiny, and, with the object of doing our utmost to maintain, and, if possible, improve our publications, the principal duty assigned to the Executive Committee has been the consideration of ways and means. The *ways* indeed are numerous enough, it is the *means* which are deficient. The still prevailing lack of adequate funds has led the Council to appeal to the general meeting for instructions, and to make a suggestion in regard to the publication of *Man*, which, if supported, would, it is hoped, while materially relieving the financial strain, only have to be regarded as a temporary expedient. This hope rests upon a solid basis, since for many years there has been a steady annual net increase in the number of our Fellows, and, consequently, in our income, and it gives me special pleasure to call attention to the fact that the number of ordinary Fellows elected in 1904 (viz. 38) constitutes a record in the history of the Institute. The next highest number was in 1882, when the late General Pitt Rivers was President. In that year, 37 new Fellows were elected, but there was a loss of 25 by withdrawal and death, leaving a net gain of 12; whereas in 1904, the net gain was almost exactly double this figure. There is every reason for believing that if the number of elections goes on increasing at the present rate, the Institute will, in a few years, be financially prosperous, and I can only express the hope that all the Fellows will do their utmost to bring about this very desirable result. Increased membership will produce the means whereby increased and more varied activity may be promoted, but in the meantime a reasonable economy *must* be practised, and it may well be considered doubtful how far we are justified in trenching further upon our very small reserve of invested capital, especially in view of the claims which life-compounders may have upon that reserve, and of the possibility of an unavoidable expenditure of capital at some future time, in the event, for example, of our wishing to move to other premises.

The Huxley Medal has been awarded during the two past years to two very distinguished men of science. In 1903, those who were fortunate enough to hear Prof. Karl Pearson's lecture, gained a new light upon certain problems of heredity. The scientific interest and practical value of his discourse were only equalled by the eloquence and clearness with which his views were expounded. Last year we were fortunate in attracting to us the President of the *Société d'Anthropologie de*

Paris, Dr. J. Deniker, who ably discoursed upon the results of his prolonged and deep researches into that most complex and difficult problem, the racial classification of Europe, a subject of which he is one of the greatest masters.

There has been considerable activity in the field amongst our colleagues, and it would appear that the number of field observers is steadily increasing. The Ethnological Survey of India still continues its useful work with success, under the able guidance of Mr. Risley, and we are promised a monograph by Dr. Rivers upon the Todas of the Nilgiris, to which we may look forward as the most valuable contribution yet issued upon the Ethnology of this interesting race, which is so difficult to diagnose ethnologically. In Africa especially, there has been manifested a remarkable activity in the collection of facts concerning the native races and tribes, and several works of scientific importance have been published recently by Fellows and local correspondents of the Institute, while others are announced.

In addition to the field-work achieved by trained anthropologists, it is very gratifying to observe the increasing interest taken in ethnological observation and investigation by travellers, the primary object of whose journeys is not ethnological, and it is greatly to be hoped that the tendency to take careful notes concerning the native tribes with which travellers come in contact may continue to grow, and that a yet greater number of those who wander far afield, whether it be officially, or in the pursuit of other sciences, or, it may be, merely for pleasure, or, again, those whose residence among the lesser known peoples affords special facilities for observation, may be willing to undergo a sufficient course of general training in anthropology, to render their investigations of the highest possible value and degree of reliability.

It is not unreasonable to hope that the excellent results and the enormous gain to our science, which would accrue from well-equipped expeditions into little known regions, for purposes of anthropological research, might tempt some of our more wealthy countrymen to loosen their purse strings, either for the equipment of some special expedition or with a view to forming an adequate fund which might be drawn upon for the purpose as occasion offers. In view of the fast vanishing primitive cultures, and the rapid extinction of some of the more primitive and ethnologically interesting races, the importance of such efforts to secure information ere it is too late cannot be over-estimated.

We have to welcome back from New Guinea the expedition equipped and organised upon an elaborate scale by a Fellow of the Institute, Major W. Cooke Daniels, who was accompanied by Dr. C. G. Seligmann. The publication of the observations made will be eagerly looked forward to, and should prove of great value. A very fine collection of ethnological specimens was made during the expedition, and it may be added that, through the generosity of Major Cooke Daniels, some of our principal museums will reap a rich harvest.

The publication during last year of a new volume setting forth the results of the striking and eminently successful journey across Australia, from South to North, accomplished by Professor W. Baldwin Spencer, and Mr. F. J. Gillen, is a notable event calling for special reference. The volume is replete with new facts and with excellent illustrations. Perhaps the greatest praise which can be bestowed upon it is to say that, as carrying us far behind the scenes of native Australian life, this new work is equal to, if not even better than the volume published some years ago by the same two indefatigable field anthropologists. The work recently published by Mr. A. W. Howitt upon the *Native Tribes of South Eastern Australia* is a welcome contribution by a pioneer in Australian ethnology. The visit paid to England during last summer by this veteran anthropologist, after the lapse of half a century, may be recorded as a pleasing landmark in the anthropological year.

The important series of reports of the Cambridge Expedition to Torres Straits have begun to appear, and we may gather from the first volume to be issued, that the whole work will be one worthy of the expedition and its organisers.

Mr. W. L. H. Duckworth has accomplished the unusual feat of publishing two important anthropological works on the same day. His textbook on *Morphology and Anthropology* fills a gap in our literature, and should prove of considerable value both to teachers and students of physical anthropology.

I have been able to refer to but a few of the recent anthropological works published by our colleagues, but the brevity of my list must not be regarded as indicating the degree of activity amongst the working anthropologists who are Fellows of the Institute. Far from it; but were I to attempt to deal in detail with this gratifying aspect of anthropological progress, I should be compelled to demand your attention for a longer time than is my due, and to prolong my address to an extent to which, in the interests of my readers, I am unwilling to do.

There are certain recent factors bearing upon the well-being and progress of anthropology, to which I feel that reference should certainly be made. Notable amongst these is the establishment by Cambridge University of a Board of Anthropological Studies. It is eminently satisfactory to learn that the cause of anthropology is being seriously taken up by one of our ancient Universities. Cambridge possesses a very able staff of teachers in this subject, and we may confidently look to great results from this excellent move on the part of the University authorities. The movement is due in large measure to the persistent activity and influence of Professor W. Ridgeway, and he is to be congratulated upon his success. The establishment of the Board was inaugurated in November with a stimulating address upon "The Practical Value of Anthropology," delivered by Sir R. C. Temple, Bart., a valuable *résumé* of the aims and utility of a scientific study of Man, which should be widely read.

At Oxford, the question of the desirability of establishing a diploma in Anthropology has been already discussed, but the scheme has not as yet had time to crystallize. Such a step, if taken, would I believe be welcomed by many as one in the right direction, and as a means of encouraging a branch of study, the material for which is vanishing every year at an increasing rate, owing to the spread of civilisation, with its good and its evils, and in response to the ethnologically disturbing influence of the development of railway systems and the racial and cultural contamination involved in the opening up of fresh trade routes.

At London University we have to note the founding and generous endowment by our veteran friend, and sometime president, Dr. Francis Galton, of a post the occupant of which will teach and organise the study of "Eugenics," an eminently practical outcome of the life-work of its founder, whose long researches into the causes which determine the well-being of a race are appreciated by all. Let us heartily wish all success to the school of research founded by this inspiriting pioneer in this field of inquiry.

Coincidently with the organisation of the study of Eugenics, a very important series of investigations have been conducted to inquire into the alleged physical deterioration of the people of Great Britain, the results of which were summed up in a report of the Government Commission appointed to conduct the enquiry. A very suggestive debate upon this important subject was held in the Anthropological section of the British Association at Cambridge, in the presence of the Prime Minister, who, as President of the Association, honoured the section by presiding over the discussion. An effort is being made by this and other societies to bring about what must be regarded as a most desirable result, to wit, the establishment of a *continuous* series of investigations into the physical conditions of our people, with a view to the acquirement of really reliable data which can be systematically collated and scientifically compared from time to time, in order that we may be in a position to determine definitely whether there is evidence of physical deterioration, and, if so, to ascertain to what causes it is due, and what are the means whereby its progress may best be arrested. It is of the utmost importance for this work that a *permanent* bureau may be established, since, in an inquiry of this nature, *continuity* is essential if the results are to be rendered of real value. The immense national importance of such a measure cannot be over-estimated, and, even were the cost of such an undertaking a considerable one, the Nation could hardly grudge the expense. It seems unlikely, however, that the sum involved would be very large, since it appears likely that a small army of volunteer workers would be available, the expenses being greatly lessened thereby. It is earnestly to be hoped that His Majesty's Government may favourably consider a scheme for the establishment of a systematic, scientific and continuous system of inquiry into the details of a problem with which our national welfare is so intimately concerned. The valuable start already made by the commission of inquiry has clearly shown that, if the statistics are to be of full value, there must be some uniform basis upon which they are collected, and that their collection must proceed continuously and be spread over a great number of years.

Among the many promising fields of investigation in anthropology, which are far too many for me to enumerate, I may refer briefly to one which calls for immediate attention, since the difficulties in the way of acquiring the desired facts are ever on the increase. The geographical and ethnological distribution of the various arts, industries, appliances and customs of Man, form a subject of the utmost importance, if we are to arrive at satisfactory conclusions as to the history and evolution of culture, and the cultural inter-relationships of races and peoples. Racial affinities are frequently reflected almost as much in the arts and customs of ethnic groups as in their physical or their linguistic characters, and it behoves us to note with great accuracy the forms under which particular products of human activity occur in various regions and to map out their distribution over the world.

It is most desirable to distinguish those which are indigenous in the regions where they are found, from those which are exotic and indicate direct or indirect communication with other peoples or races. The day will come, no doubt, when the customs and appliances of Man will be classified as nearly as possible in accordance with their morphological affinities. Much, indeed, has already been done with this end in view, but our principal aim at present should be to collect, or at any rate accurately describe, the various forms under which the different products of culture are manifested, their geographical range and, as far as possible, their "place in time." I cannot but foresee the day when it will become imperative to adopt some system of *nomenclature* such as that employed in zoological and botanical classification, to indicate briefly the families, genera, species and varieties of the various manifestations of human mental activity and culture-progress. To many workers it would be a matter of great convenience were a binominal or, better still, a trinominal system of nomenclature universally adopted, combined with a well-organised system of registration. The establishment of such a nomenclature would, I am well aware, be an alarming and difficult undertaking, but it seems to me that the demand for it must arise, in order that we may save constant redescriptions and to facilitate references to types. It would be essential that the names assigned to objects should be as appropriate as possible without a sacrifice of brevity, and, with this object in view, it would certainly be desirable for a strict censorship to be exercised before names are registered, in order that anthropological nomenclature may be kept within easy range of grammatical constructions, and, moreover, be spared such polyglot and redundant name abominations as, for example, *anabas scandens* or *ophiocaryon serpentinum*, which still, I believe, survive in the zoological and botanical nomenclatures.

While pointing out that for purposes of research some complete system of naming would be of considerable value, I still remain alive to the fact that terminology has been one of the stumbling-blocks in the way of the popularisation of Anthropology. There can be little doubt, I think, that one of the most popular and deserving of anthropologists would be he who would invent a really satisfactory terminology for this science and its various subdivisions, and who, as a means of indicating the different branches of the subject, would evolve a set of terms of a kind which might become more universally recognised, and would prove less severely deterrent than many of those at present in vogue; cf a kind, that is to say, which would be more readily understood and assimilated by the general public. He would undoubtedly be doing much towards rendering the subject more popular, and he would help to bring home to the members of our huge empire that the scientific study of Man, while at times it unquestionably involves research of a highly special and technical nature, is none the less one which it is to our advantage to encourage, and which may with confidence be ventured upon by the uninitiated and be pursued with both interest and success even by those who do not contemplate making it their profession.

THE MANUFACTURE OF POTTERY IN UPPER EGYPT.

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[With Plates I–VI.]

The principal pottery fabrics of Upper Egypt at the present day may be classified under three headings, viz.:—

I. *Hæmatitic* wares, that is to say those in which the earthenware body is coated with a wash or slip of red hæmatite.
II. *Painted* wares, decorated with patterns upon a field formed by a slip of lighter colour which is not hæmatitic in composition.
III. *Household* pottery, which is seldom covered with any kind of slip.

To some extent this classification corresponds with a geographical distribution, inasmuch as the hæmatitic wares have evidently originated in Nubia, while the area in which painted pottery is made is confined to two or three places between Assuân and Keneh, and the non-hæmatitic household pottery, though manufactured everywhere north of Assuân, is foreign to Nubia.

I. In its original home the hæmatitic pottery is not ornamented except in so far as the few simple lines sometimes incised about the neck of a vessel (Plate I, Fig. 1) may be considered to constitute ornamentation. As found in Nubia, it is a plain hand-made fabric, of which the sole beauty is in the colour and burnish, for the varieties of form are very few. But at Assuân, and still more at Assiut, inventive potters have improved greatly upon the simple Nubian technique, and have produced a very delicate turned or moulded ware, characterised by an elaborate scheme of ornamentation, which is chiselled or stamped in low relief upon the polished surface of the hæmatitic slip.

The chief seat of the Nubian pottery manufacture is Umm-Barakat, a large village some 30 miles south of Assuân. The potters, who are all women, live in a few mud houses on the east bank, though the greater part of the village lies on the west bank of the Nile. The large red bowls and globular red pots (Plate I, Figs. 1 and 2) which are used in every household between Assuân and Wady Halfa are mostly made at this place, though the women of Umm-Barakat do not enjoy a complete monopoly, as there are potters who live in other villages further south, such as Kubbân, where, however, they only carry on their work in the summer months, so that the ordinary visitor has no opportunity of observing it. A single family has migrated from Umm-Barakat to Shammah, a few miles north of Assuân, and there (Plate II, Fig. 1) continues the industry, which is in danger of disappearing from the parent village in consequence of the desolation which the Assuân dam has wrought by flooding the fields from which the peasants obtained their scanty living.

At Shammah the entire family of potters was busily engaged when I arrived. The group of women may be seen in Plate II, Fig. 1, seated in an open space outside the houses and surrounded by their gossiping friends. On the left of the picture one is pounding broken potsherds upon a slab for the powder which must be mixed with the Nile mud to give it the requisite stiffness for making earthenware. In the centre two others are deftly shaping the pots, and some of the products of their skill may be seen in front of them. Their simple apparatus was spread out upon a small strip of grass-matting, and, besides the bowls filled with ashes upon which the clay is placed and worked freehand into shape, consisted only of (1) a bowl filled with the already kneaded clay, (2) a second bowl filled with water and (3) half a dozen of the large Nile shells which are used for smoothing the superfluous clay from the surface of the vessel as it is being made.

The process at Shammah was exactly the same as at Umm-Barakat (Plate II, Fig. 2) where a few days previously a wizened hag had consented to exhibit all the stages in the making of such specimens as are illustrated in Plate I, Figs. 1 and 2. The first thing to be done is to knead the clay. This, as has been already stated, is merely Nile mud mixed with a certain proportion of pounded fragments of old potsherds. A lump of the mud dough is placed upon a wide bowl filled with ashes which have been slightly damped. The lump is of such a size as will suffice for the making of the entire vessel, be it bowl or pot. For a bowl it will be a solid disc about 2 inches high, but for a globular pot it will be rolled into a ball rather than a disc. Taking a little water, the potter presses a hollow in the middle of the clay lump and begins to form it into shape, holding the outside of the growing vessel with her left hand and shaping it with her right. From time to time she twists the bowl of ashes from left to right in order to bring another part conveniently beneath her hand, and pulls the clay outwards from the middle of the lump to form the rapidly rising sides. With a little water she moistens the surface every now and then as it is required.

The rudimentary bowl will now be 2 or 3 inches in depth, its centre hollowed out but its sides still vertical and thick. The sides must next be heightened and thinned, to do which the potter takes a large shell of a common Nile variety and strokes the outer surface of the bowl upwards, producing at the same time the first indications of a curve in the section of the side. Then she shapes the interior still more with the right hand, and smooths the top surface to make the rim. Lastly, she smooths the interior also with the shell, and at the same time imparts to the sides the full convexo-concavity of a finished bowl (Plate I, Fig. 1).

A pot of globular form, such as that which is figured in Plate I, Fig. 1, is made in the same way. When it has been hollowed out in the centre, and its sides, vertical as yet, are 4 or 5 inches high, the potter takes the shell in her right hand, places her left against the inside, and so smoothing with the shell raises and thins the sides until she has produced a plain jam pot from 5 or 6 inches high. Then, holding her left hand against the outside and fashioning the interior with her right, she rapidly imparts the desired convexo-concavity and transforms the vertical walls of the jam pot into the rounded sides of a globular vessel. At this stage there is a slight variation from the former procedure, for, whereas the bowl was completed without the addition of any more clay to the original lump, in this case a little more clay must be taken from the reserve which stands near in order to finish off the rim of the pot. Then the outside is smoothed with the shell and the final degree of sphericity is given to the outline. One more stage, however, still remains before the formation of the globular pot is quite complete, and that is the adding of the foot or base-ring, which cannot be done for two or three days, when the vessel has been dried.

Though they have now received their permanent shape and outline, the bowl and the pot are not finished. Several more stages must intervene before they can be utilised for the purposes for which they are intended. First, they must be left to dry, which requires ten days in the open air. Next they must be coated with a substance which will render the porous clay impervious to liquids. For this purpose the Nubian potters use hæmatite which is found in the hills at no great distance. They pound it on a slab with a round stone until it is reduced to powder, then mix it with water and a little olive oil, and apply it to the surface of the pot with the hand (Plate II, Fig. 2). This would be sufficient for the mere utilitarian purpose of counteracting the porosity of the clay, but the potter is more ambitious, and is aware of the beautiful effect which can be produced by burnishing. The hæmatitic coating is therefore carefully burnished with a smooth oval pebble until it has acquired a glossy surface which glitters in the light. Finally, if the vessel is to be permanent, the soft clay must be hardened in the fire, a process which also takes place in the open air. The pots are piled within a ring of stones about 3 feet in diameter, over which the fuel is heaped and left to burn itself out. After a short interval has been allowed for cooling, they are then removed, and are ready to be sold or to be exported to other villages.

So far as I have been able to observe, the making of pottery by freehand is confined to Nubia. Shammah, which is a settlement of emigrants from Umm-Barakat, is the only place north of Assuân where so primitive a procedure is still followed; all the other potters whom I have seen at work in Upper Egypt employ the lathe, the wheel, or the mould. Again, it is only in Nubia that women are the potters, elsewhere in Egypt the master-potter is always a man, and if the women take any part in the work, their share is confined to the burnishing and decorating. Moreover, not only the process of freehand working, but the use of the hæmatitic coating is distinctly Nubian. It is true that the finest and best known of the hæmatitic wares is made at Assiut, but I have ascertained by inquiries at both places that the Assiut potters learned their art at Assuân, while there can be little doubt that the Assuân fabric in its turn is evolved from that of Umm-Barakat.

The Nubian hæmatitic ware is all intended for actual service, and is indeed the only pottery which is in general use throughout that part of the country. Its varieties of form are therefore few and simple. The Assuân and Assiut potters, on the other hand, do not make any ware for ordinary domestic purposes, but exhibit their inventiveness in producing various fancy articles of an ornamental kind, such as coffee sets and vases, figures of camels, dogs, and crocodiles, candlesticks, censers, and pipes. Their command of more advanced technical appliances and of a superior quality of clay enables them to manufacture a pottery which is much esteemed for its beauty, and is sold in quantities to tourists and visitors. A link between the hand-made Nubian ware and the ornamental product of Assuân and Assiut is found at the village of Ballas, where, in addition to other classes of pottery which will presently be described, they make hæmatitic bowls resembling those of Shammah and Umm-Barakat in general appearance, but differing from them in the essential point that they are formed upon the wheel. That the manufacture is not native to Ballas may be inferred from the fact that they send to Assuân for their hæmatite; the clay of these bowls is of superior quality, consisting of about two-thirds Nile mud blended with about one-third of a white earth obtained in the neighbourhood.[1]

The ornamental hæmatitic wares are illustrated by the drawings in Plate I, Figs. 3–13, which are taken from examples bought at Assuân. The village where the potters live is outside Assuân itself, about half a mile from the bazaars. There are three manufactories, which are all worked by a single family consisting of eight men. In that which I visited the work was being carried on by two men, of whom one, the master, appeared to do little but attend to the firing. The other, who was seated in a half-open vestibule of the house, was busy at the lathe. The material of his pottery was a clay formed by blending Nile mud in equal parts with a white earth which is obtained from Shammah, though it is not used by the Shammah potters. The clay, after it has been properly kneaded, is placed in a receptacle beside the potter, who then takes out a lump of such size as he judges to be appropriate for the object which he intends to make, and squeezes it in his fingers to a convenient form for the lathe. Perhaps it is a pipe-bowl that he wishes to produce, in which case the lump of clay will be in the form of a hollow hemisphere, or perhaps the purchaser has ordered a cigar holder, and then a more convenient form to begin work upon is a long cylindrical roll.

The lathe is of a common type. Two boards are set up vertically about 15 inches apart on a wooden base, and held together by two horizontal struts. From the tops of the boards two pieces of iron project horizontally inwards and form the pivots, on to which a thin rod some 10 inches long is slipped. This rod is rotated by a bow about 30 inches long, which the operator works with one hand, while with the other he shapes and graves the clay as it revolves. The meaningless lump on the lathe rapidly acquires an outline under the skilful direction of the potter. Regulating the revolutions of the rod with his bow, he makes it move now fast, now slow, to suit his wants, and all the while as it turns he removes superfluous clay, cuts, smooths and graves. For these purposes he uses a set of iron tools, of which ten form a complete outfit. Besides these he possesses, and will use at this stage if he requires them, a series of wooden stumps for impressing the worm thread of a screw on pieces which are to be fitted together into some such composite construction as a candlestick or censer. The simplest elements of the ornamentation, viz., the concentric lines, are incised while the clay is still on the lathe, for a touch of the chisel on the soft surface of the revolving object produces a circle of such exactness as the unaided hand cannot emulate. But the greater part of the ornamentation is reserved for a later stage, and before it can be done the hæmatitic slip must be applied. The hæmatite, which is bought ready ground in the neighbouring bazaar, has been mixed with water and stands in a vessel beside the potter, who takes the newly-formed pipe-bowl, cup, or whatever the object may be, from the lathe and daubs the red wash on with his fingers, then smooths the surface with an iron smoother.

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[1] Other bowls made at Ballas have the hæmatitic slip outside but a white slip inside; and others again have the white slip both inside and out.

It is now that the real decoration begins. The clay is still quite soft, for the preceding stages have followed one another without interruption or interval. The Assuân artist chases his patterns with an iron tool; and works from memory alone. But at Assiut the deplorably scientific potter from whom I bought some examples of the best work that is produced in Egypt, possessed wooden stamps with which he impressed all the more complicated patterns. This same man, to whom no further reference will be made, had discarded the lathe, and used in place of it solid moulds of hard wood or of pottery, upon which he shaped the several parts.

When the newly-made pot has been decorated, it is not ready to go at once to the fire, for the water in the clay would be converted into steam and burst it. Such a calamity actually occurred at Assuân, where, wishing to see this stage in the evolution of such little double vases as are figured in Plate I, Fig. 12, I induced the potter to fire them one day earlier than he would otherwise have done. The result was that a few minutes after the fire had been lighted a series of reports was heard, and only one out of the group of eight ultimately survived its ordeal of three-quarters of an hour. The furnaces at Assuân (Plate III, 1, 2) were much like those of Umm-Barakat and Shammah, viz., circular holes, which, however, in this case were enclosed by bricks instead of stones. The kind of fuel used varies according to the degree of heat which is required. For the hæmatitic wares of Assuân and Assiut are turned out in either of two colours, viz., red or black, the difference between which is solely due to the difference in the intensity of the heat during firing. To produce the red colouring the only fuel used is animal dung, but if the potter wishes to obtain a black surface he adds a little chopped straw to the dung. This gives a fiercer heat and turns the hæmatitic slip black instead of red.[1]

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[1] At Assiut a third variety of ware is made which is similar to the hæmatitic in all other respects, but is coated with a cream-coloured slip.

One stage still remains. This ornamental pottery, unlike the hand-made, is not burnished until it has been fired. The surface of the pot after firing is still quite dull and lustreless; but while it is still hot the potter polishes it to a glossy brightness, using for the purpose a cloth and two burnishers, one of which is a composite made of beeswax and a red substance called *gum-bahár*, while the other is just such a common smooth pebble as is used by the women at Shammah and Umm-Barakat. The pebble is apparently used for the interior, and the delicate exterior surface is only touched with the special composite burnisher.

II. *Painted Ware* such as that which is illustrated in Plate V is made only at two or three places in the Keneh province. I found it being manufactured with the household pottery at Edfu, Tukh, and Ballas. The first and the last of these towns are important centres of pottery making, and contain manufactories in which as many as half a dozen persons are employed simultaneously. In Plate III, 3, is shown a general view of the potters' establishment at Edfu. On the right of the picture two men are preparing the material, which is Nile mud mixed with ashes, and sometimes with a little chopped straw. Behind them is the wheel, the construction of which may be better understood from the illustration in Plate IV, 3. In the centre and on the left stand a number of large basins and other varieties of household pottery, which are drying in the sun previous to being fired; amongst them sits the master-potter, who is scraping off the superfluous clay from the outside of a basin which has just been made. Against a wall in the extreme left-hand corner (distinguished by their whiteness) stand basins and bowls which belong to the class of painted pottery illustrated in Plate V; and if the picture could be slightly extended to the left, it would further include the women who are at work burnishing and decorating similar specimens.

The earlier stages in the manufacture of the painted ware are identical with those of the household ware to be described in the next section, and demand no special notice here. It is sufficient to remark that the pottery is all turned upon such a wheel as that illustrated in Plate IV, 3, and that it is always a man who works the wheel. The interesting time in the history of these pots begins when they have been removed from the wheel and sufficiently dried in the sun. Then they are handed over to the women, and pass through three more stages before they are ready to be fired. The first of these is the application of the slip, a white earth which the Edfu people bring from the hills half a day's distance from their village, but which the inhabitants of Tukh and of Ballas can find in the immediate neighbourhood of their homes. A thin wash made from this earth is daubed with a rag over the inside and outside of the bowl or plate, which is then laid on one side for a few minutes to dry. Next the slip surface is burnished with a smooth pebble, and then it is ready to receive the painting.

The process of painting is illustrated in Plate IV, 1, 2, where the woman who really does the work, but who could not be photographed, is represented by a boy. The women exhibit very great proficiency. Working from memory and without any pattern before them, they paint an entire bowl in a few minutes, laying on the colour with a thin feather. The colouring is in monochrome, viz., a dark purple at Edfu, red at Tukh, black at Ballas, and is not sensibly altered in firing. In Plate V, the most frequent designs are illustrated. When they have been painted the pots are fired in one of the large kilns to be described in the next section, which are used for all the classes of pottery made at these three places. Though the painted patterns are not affected by the fire, yet, whether owing to a difference in the composition of the body or to a variation in the intensity of the heat, the slip which remains as a white field in the Tukh and Ballas ware is changed by the fire to a bright orange in the Edfu specimens. It may be remarked that the composition of the body is not identical at all three places, for, while at Edfu it consists merely of Nile mud and ashes, at Tukh and Ballas a fourth part of the same white clay that is used for the slip is added to these ingredients.

III. *Household Pottery* of the class illustrated in Plate VI is made at very many places. Certain towns, however, have acquired a special reputation for the excellence of their products, which they export all over Egypt. Thus the large water-pitchers which are in general use throughout the country are almost all made at Ballas, and derive their name from that village. And again, the finest of the porous water-bottles (Plate VI, 1, 13–17), are manufactured at Keneh, which does a considerable export trade.

All this household pottery without exception is made on a wheel, the construction of which may be best understood from the illustration in Plate IV, 3. The potter is seated on a board, and impels the large wooden fly-wheel with his foot, thus rotating the wooden table upon which the pot is to be fashioned; the table is brought up to a convenient height for the hand by building up with mud. In the example illustrated the fly-wheel was about 4 feet and the table about 1 foot in diameter, but the latter, being only 3 inches deep, did not reach by about 12 inches to a convenient height for work. A block of dried mud about 6 inches high had therefore been placed upon it, and another block of wet mud upon this. The wet mud formed the bed for a platter of dry mud upon which the pot was now to be formed.

Taking a lump of clay of such size as he judges will suffice for the pot which he contemplates making, the potter sets it on the platter and begins his creative work. With incredible swiftness the soft lump takes shape, and almost quicker than the eye can note passes through a protean succession of changing forms until in two or three minutes it emerges as a graceful water-bottle (Plate VI, 1.)

A plate or bowl in its earlier stages gives little hint of its final form; the clay as first set on the platter is a solid cylinder, against the outside of which the potter presses his two hands, and instantly the surface is ploughed into wide furrows where his fingers have rested. He moves his hands upwards, and the furrows become spiral; then suddenly he presses his thumb downwards into the centre of the mass and a wide hollow opens out. This is the concavity of the rudimentary bowl. Next he holds one hand against the outside surface and with the other presses against the inside, rapidly fashioning and smoothing all the while, until he has produced a bowl like that which forms the main part of the grinder shown in Plate VI, 4 (to which VI, 5 also belongs), or a plate such as is figured in Plate VI, 2.

For a jug (Plate VI, 3,) or other handled pot a second stage is necessary. The vessel itself is first formed, then it is left to dry and the handle and spout are only added later with separate pieces of clay. Otherwise all pots, unless they are of large dimensions, are usually made at one sitting and from a single lump of clay, though bowls, which are apt to work too thin at the point where they stand on the wheel, are strengthened with a small extra piece which is bedded at the last moment into the centre of the interior.

The larger pots, however, are made in more than one piece. This is the case, for instance, with the *zîr*, or water-pitcher (Plate VI, 8, 9, 12), the Ballas, and some of the *gawadýs*. Two kinds of *gawadýs*, which are the familiar jars used for the water-wheel, are here illustrated. One (Plate VI, 10), was made in a single piece, the other (Plate VI, 6), which is shown just as it came from the wheel, was made in two pieces, that is to say, the part round which the string is coiled was formed first and was placed mouth downwards for the other half to be added to it.

It will be observed that several of the specimens illustrated in Plate VI have string coiled round them. This is the method adopted for impressing a very simple and familiar ornamentation. If a *zîr*, which is one of the larger pots (Plate VI, Figs. 8, 9, 12), is being made, it will have attained about half its future height as it stands on the wheel, when a long piece of twisted string is taken and coiled round it; then the next piece is built on to the bottom half with a second instalment of clay, the place of the join being neatly smoothed with a potsherd. Yet another thick roll of clay is taken on to build the last section before the rim, and the rim itself is made with a fourth instalment. The smoothing of the surface is always done with a sherd while the pot is on the wheel, and the nicking of the rim in plates or bowls (Plate II, Fig. 2) is effected with the finger or with a piece of tin. All the ornamentation is produced by the simplest means. To take the *zîr* again as an example, the patterns as well as the dimensions[1] vary, but the impression of the string is almost always found on the lower half. Above this, in the Edfu specimens, a concentric band of pittings is made with the forefinger at about a third of the distance from the top, and above and below this band, again, vertical or diagonal lines are incised in sets of three by means of three thin straws held together in the hand. At Tukh the pattern is slightly different, but is produced by the same means.

The pots, then, have now been shaped and ornamented. They are removed from the wheel, and, still adhering to the platters on which they were made, are left in the sun to dry. In Plate VI, Figs. 1–13, they are shown at this stage, the clay still wet and the strings in place. After about five days' drying in the open air—the time of course must vary with the season—they are ready to be fired

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[1] These water-pitchers have been made large enough to hold a man. A pasha, whose fame yet lives, used to administer justice in the hot weather seated in a *zîr* with a negro slave pouring water over his head.

The kiln is of much of the same type everywhere; that of the Edfu pottery establishment was four-sided, and measured about 9 feet in diameter and 10 feet in depth. Three feet from the bottom was an arrangement of bars of brick, five bars one way and two the other, below which the fuel was inserted through a low door in the side of the kiln. Rubbish of all kinds, straw, charcoal or anything else, is used indiscriminately for the fire, which is left burning some four hours. The pots are placed on the bars and on the spaces between the bars, and burn to a reddish colour or to a powdery white according to the nature of the clay. This of course varies in different places; the composition of the body at Edfu, Tukh, and Ballas has been given above. Another potter at Tukh, whose work I have not described, since he made only two or three varieties of household pots and none of the decorated, used a different body, viz., one-third Nile mud and a little ash blended with two-thirds of a white earth brought from Kossir. His household pots were, moreover, coated with a slight wash of the same white earth and burned to a yellowish-red. I have stated that household pottery is seldom covered with any kind of slip, and this is true of all but a very few varieties. The whiteness of such water pots as the Gullal in Plate VI, Figs. 14, 18, is simply due to the superior character of the clay. These five specimens were made at Keneh itself, and, unlike those figured in Plate VI, 1, 13, had been dried and fired before they were photographed. The Keneh clay is obtained from a plot in the cultivation area not far from the railway station; it is not mixed with Nile mud, but only with about a fourth part of ashes from the fire. The process of manufacture at Keneh does not differ from that which has just been described; the pots are made in one piece, except when there is a perforated sheet on the inside for filtering the liquid. Then they are made in two pieces, viz., the first up to the filtering holes, which are pierced with a pointed stick in the wet clay, and the second piece above these holes.

I reserve for a future occasion some remarks upon the interesting parallels which some of these modern pottery fabrics present with ancient Egyptian pottery of various periods.

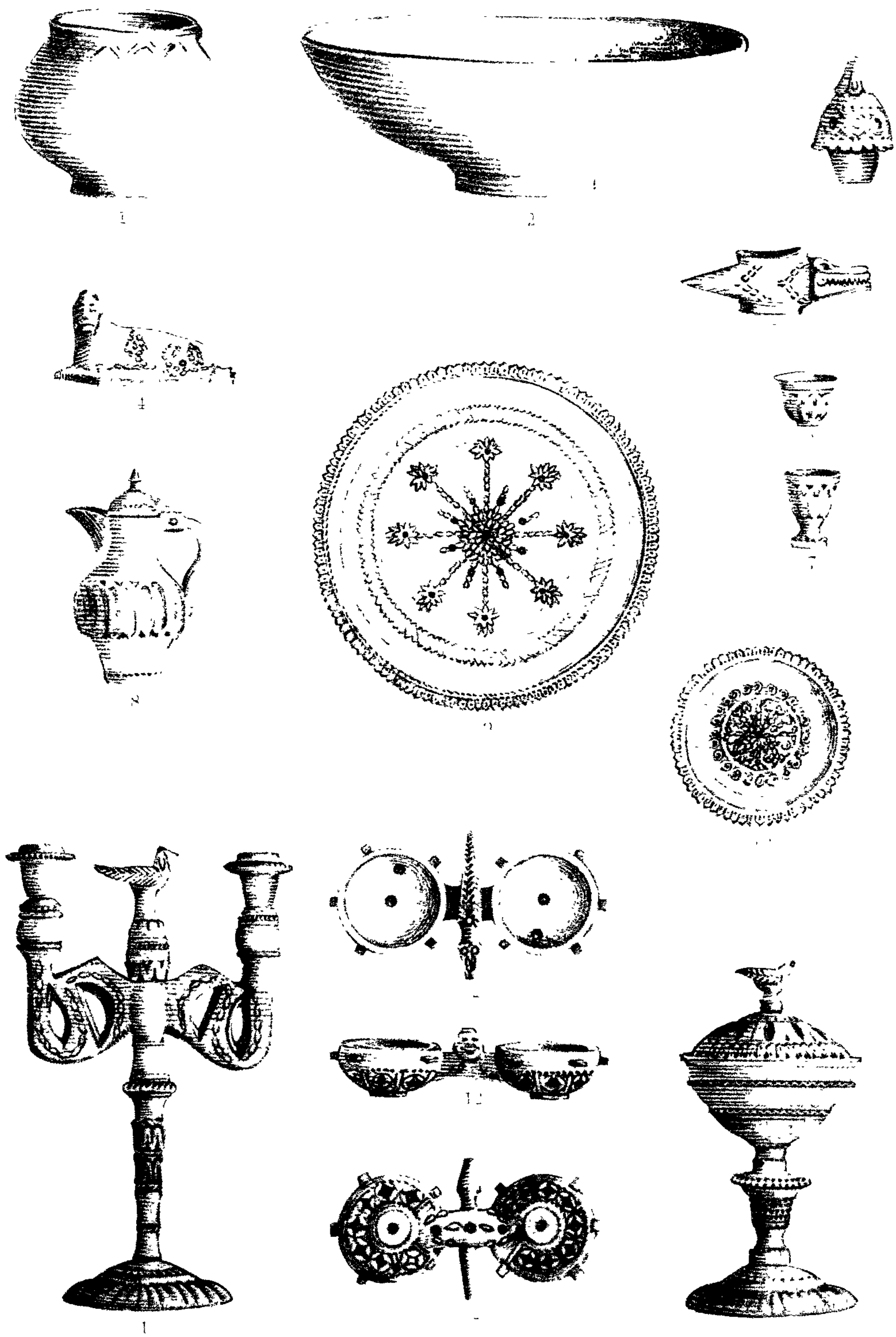
Description of Plates.

Plate I. Specimens of the hæmatitic wares of Upper Egypt.
Fig. 1, from Shammah.
Fig. 2, from Umm-Barakat.
Figs. 3–13, from Assuân.

Plate II. Fig. 1. The women of a family making pottery, Shammah.
Fig. 2. The potter-woman laying on the hæmatitic slip, Umm-Barakat.

Plate III. Fig. 1. The open air furnace, showing firing of pottery, Assuân.
Fig. 2. The open air furnace, showing pottery when the firing is just completed, Assuân.
Fig. 3. The potter's establishment at Edfu.

Plate IV. Figs. 1 and 2. Boy (who represents a woman) painting the pattern with a feather.
Fig. 3. The potter at work with his wheel, Tukh.



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THE MANUFACTURE OF POTTERY IN [illegible] EGYPT

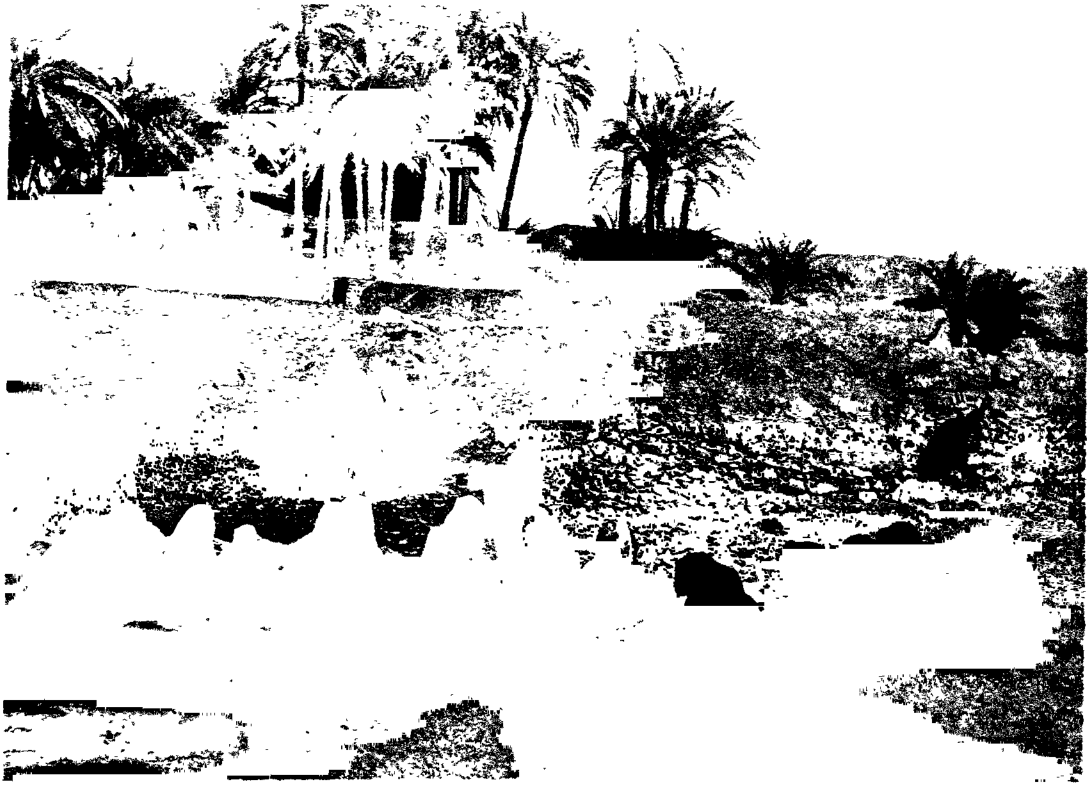


FIG. 1

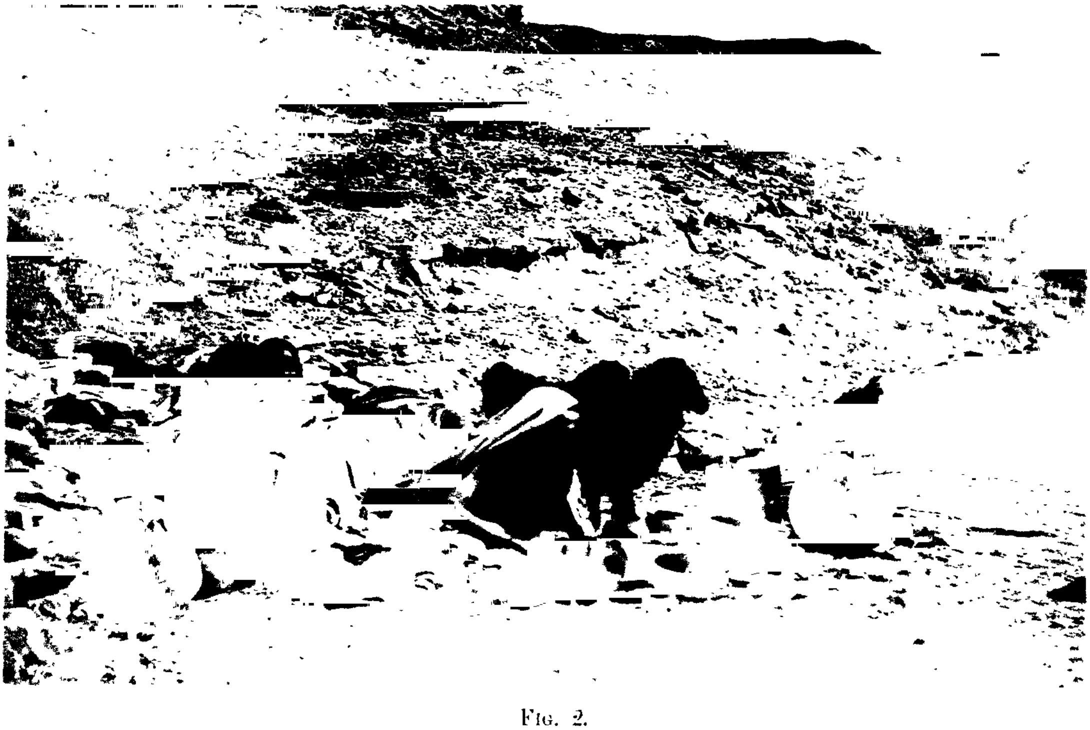


FIG. 2.

THE MANUFACTURE OF POTTERY IN UPPER EGYPT.

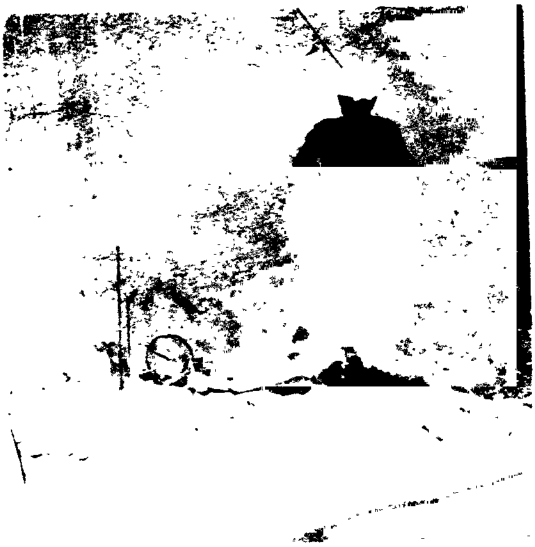


FIG. 1.

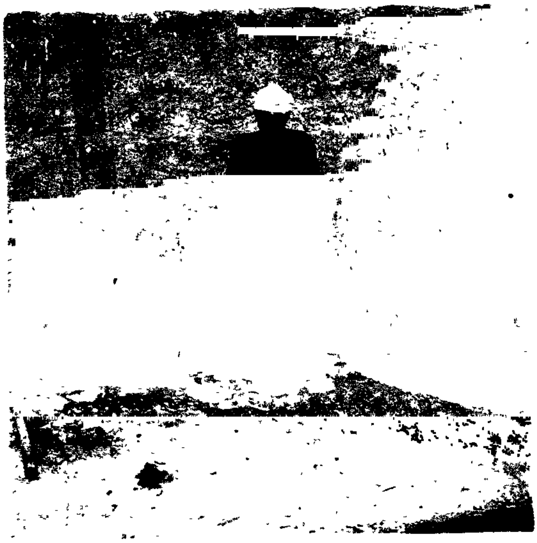


FIG. 2.

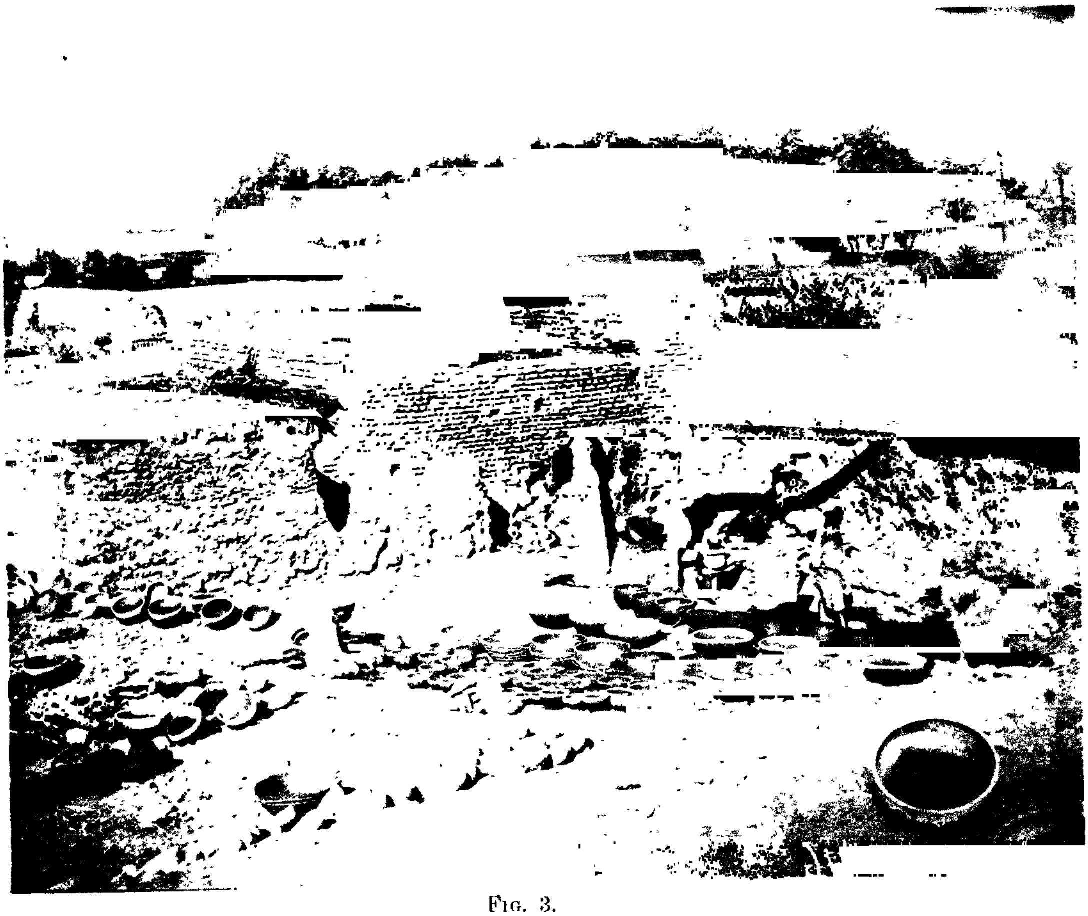


FIG. 3.

THE MANUFACTURE OF POTTERY IN UPPER EGYPT.

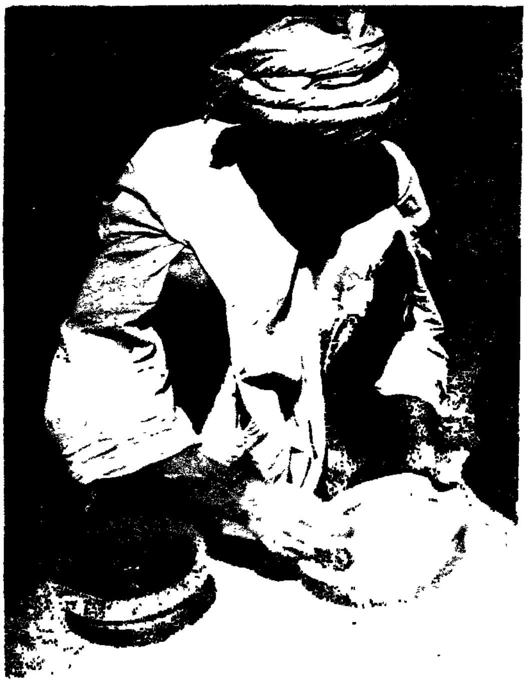


FIG. 1.

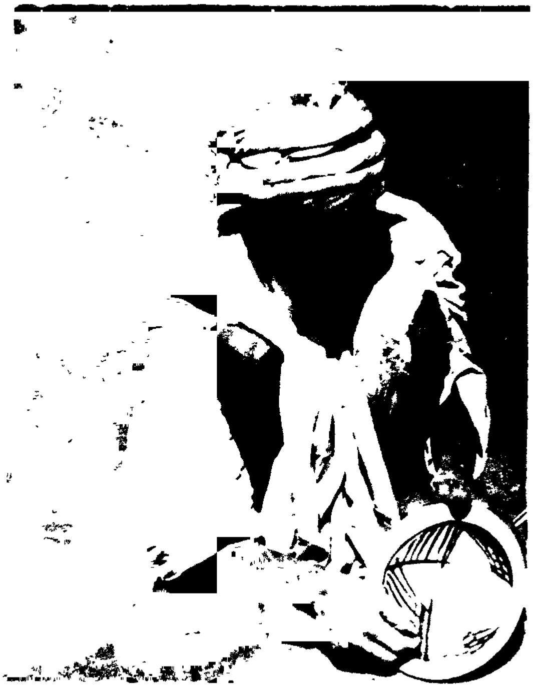


FIG. 2.

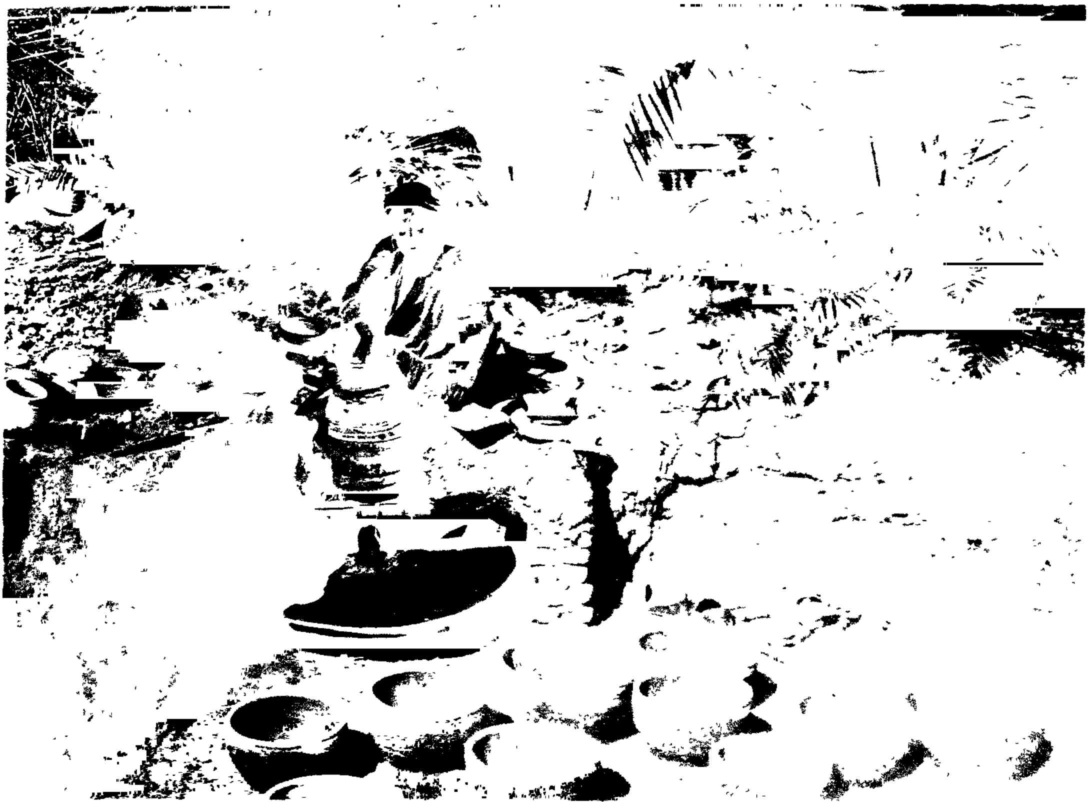
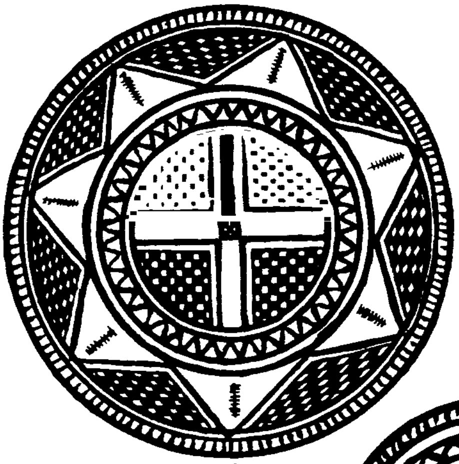


FIG. 3.

THE MANUFACTURE OF POTTERY IN UPPER EGYPT.

Journal of the Anthropological Institute, Vol. XXXV, 1905, *Plate V.*



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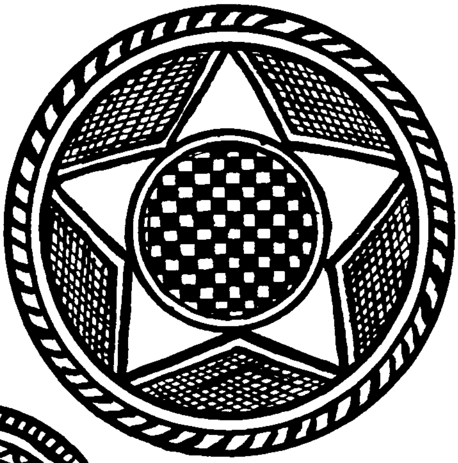

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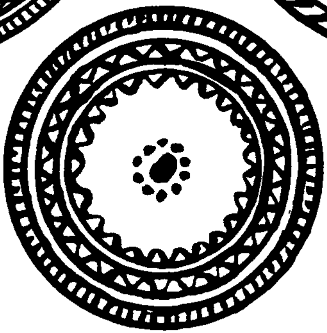

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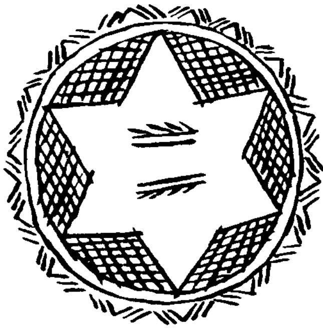

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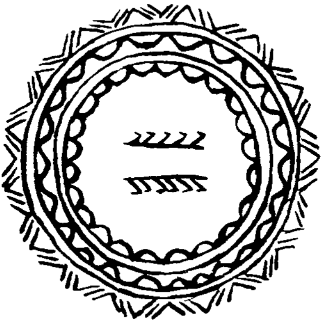

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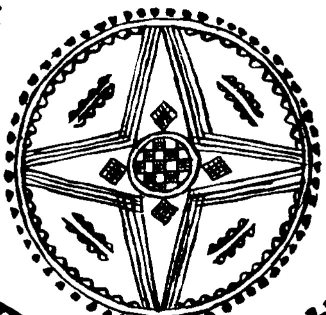

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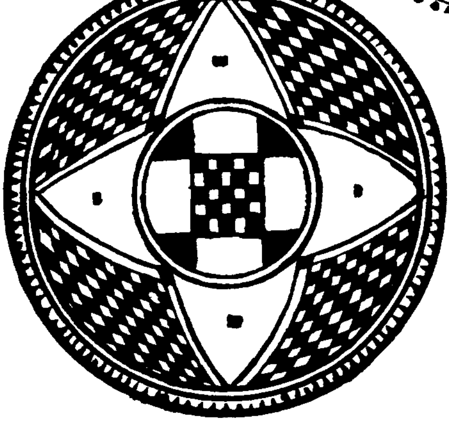

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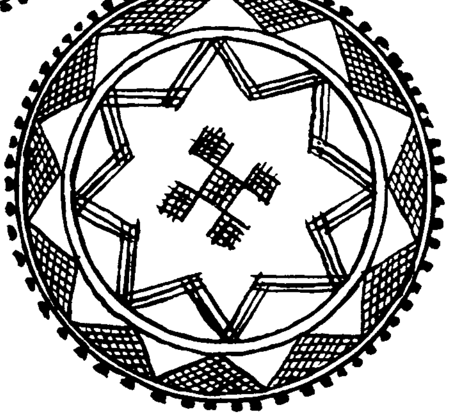

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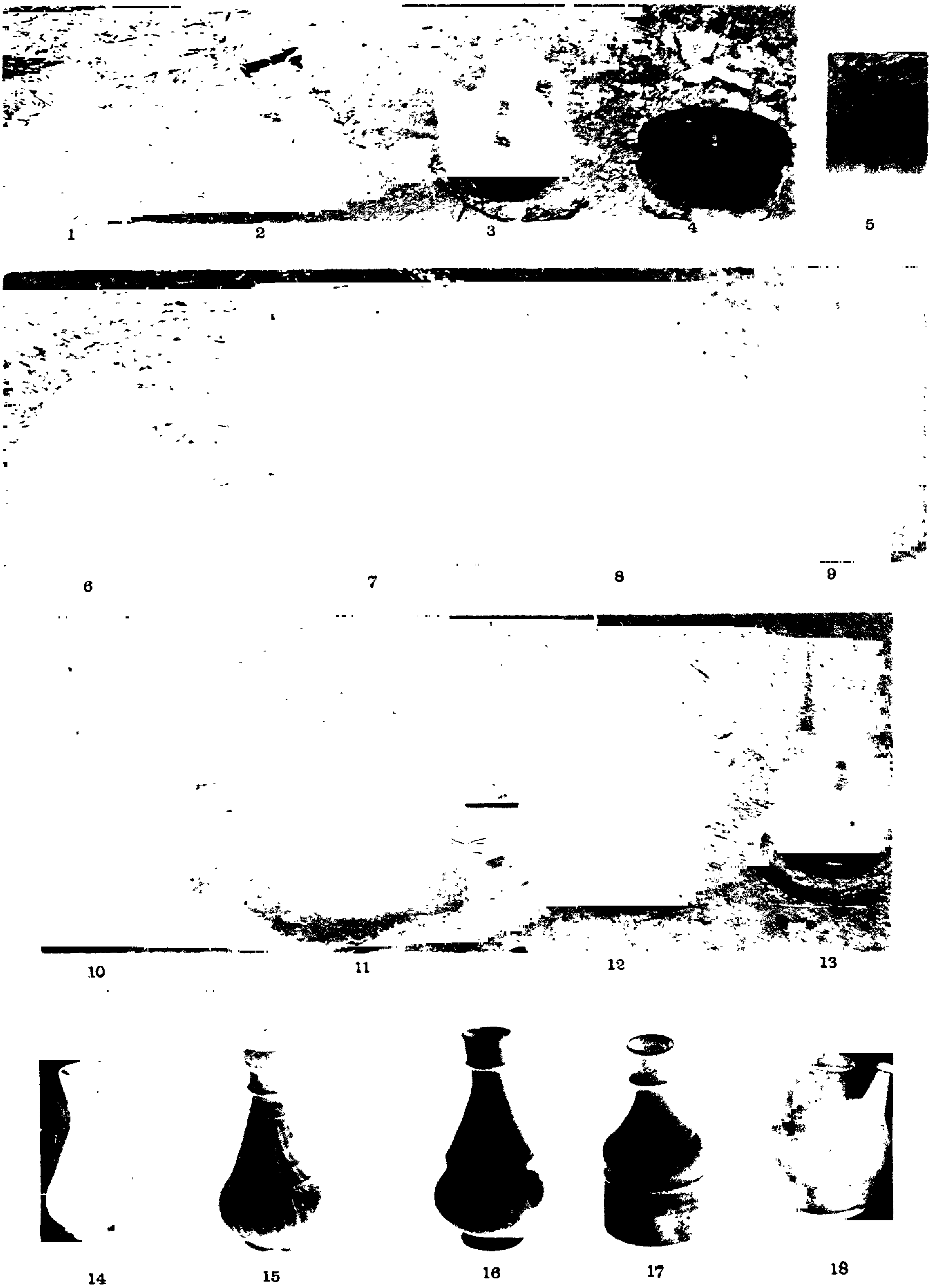
THE MANUFACTURE OF POTTERY IN UPPER EGYPT.

Journal of the Anthropological Institute, Vol. XXXV, 1905, *Plate VI.*



THE MANUFACTURE OF POTTERY IN UPPER EGYPT.

Plate V. The chief patterns which occur on the painted wares.
Figs. 1, 2, 3 and 7 from Edfu.
Figs. 4 and 5 from Tukh.
Figs. 6 and 8 from Ballas.

Plate VI. Household pottery.
Figs. 1–9 from Edfu.
Figs. 10–13 from Tukh.
Figs. 14–18 from Keneh.

THE RELATION OF THE CRANIAL SUTURES TO AGE.

By F. G. Parsons, F.R.C.S., and C. R. Box, M.D.

In former years many anatomists professed to be able to estimate the age of a skull pretty accurately by the amount of obliteration which had taken place in the cranial sutures, and it is probable that this was the criterion on which the late Dr. Barnard Davis chiefly relied in giving approximate ages to the skulls of the great collection which now stands in his name in the Museum of the Royal College of Surgeons. That the practice was not a very reliable one may be gathered by comparing the statements of writers like Testut, Tidy and Topinard, and then trying to fix the age of any individual skull by them. Each of these writers no doubt spoke from personal experience, but they were all generalising on too small a number of observations to make their statements of much practical value.

The first really scientific paper on the subject is by Dr. T. Dwight ("The closure of the Cranial Sutures a sign of Age:" *Boston Medical and Surgical Journal*, vol. cxxii, No. 17, p. 389), who reviews the literature of the subject up to 1890, and gives the details of 100 skulls of people of European and African descent, the ages of whom at death he knew. His conclusions contrast very curiously with the dogmatic statements of the older writers, and although his paper should be studied in its entirety by anyone interested in the subject, we may be allowed to quote some of his conclusions. He finds that the sutures often begin to close before 30; that between 30 and 40 ossification has almost always made good progress, that the closing almost invariably begins on the inside, and it seems that the process does not necessarily appear first on the outside opposite the points previously attacked inside. "I think," he says, "that closure begins in the back part of the sagittal, and often as soon or nearly as soon in the lower end of the coronal." "I think that when the sutures close early, the coronal usually closes before the lambdoid, but that in old skulls, on the outside at least, the lambdoid is more frequently obliterated than the coronal." In 1895 another important paper appeared by Dr. T. Picozzo (*Archiv. di Psichiatria, Scienze Penali e Antropologia Criminale*, xvi, 6, pp. 364–398), who lays a good deal of stress on the different order of closure in the two sexes. As far as we are able to gather from a review of his paper in *Archives Italliennes de Biologie*, 1896, tome 26, p. 333, he does not distinguish between the ecto and entocranial aspects of the sutures, and this to us seems unfortunate, for our own observations teach us that the latter are by far the most important.

The paper now presented contains the records of 82 skulls, by far the greater number of which have been observed in the Dissecting and Post-mortem Rooms of St. Thomas's Hospital, and are of lower and middle class English people. A few are skulls from the Museum of the Royal College of Surgeons, of which the age at death was accurately known, and of these one or two are foreign. We are indebted to the kindness of Professor C. Stewart, the Curator of the College of Surgeons' Museum, and of Dr. C. Powell White, our Pathologist, for allowing us the use of material and for assistance generally. It will be seen that our records are fairly evenly distributed over the different decades of life, and we hope that they will contribute towards the more exact knowledge of a subject which may be of considerable anthropological and medico-legal interest. In the following lists the ecto and entocranial appearances are treated separately, but as in a few cases we were unable to look at the inside of a skull, the numbers do not always correspond. To remedy this we have placed two numbers in front of the entocranial records, and the second of these (in brackets) refers to the number in front of the ectocranial record of the same skull.

ECTOCRANIAL SUTURES. Below 30.

1. ♂ *æt.* 17. All patent.
2. ♂ „ 18. Obliteration commencing below L. stephanion.
3. ♂ „ 18. All patent.
4. ♀ „ 19. „ „
5. ♀ „ 25. „ „
6. ♀ „ 26. „ „
7. ♀ „ 27. „ „
8. ♀ „ 27. „ „
9. ♀ „ 30. „ „
10. ♂ „ 30. Obliteration commencing below stephanion and upper half of metopic.
11. ♀ „ 30. All obliterated except coronal above stephanion.

This points to the conclusion that under 30 the sutures are usually patent, but that ectocranial obliteration commences below the stephanion.

ECTOCRANIAL SUTURES. Between 30 and 40.

1. ♂ *æt.* 31. (Thurtell's skull, R.C.S. Museum). Obliteration commencing below stephanion.
2. ♂ „ 31. All patent.
3. ♀ „ 32. „ „
4. ♂ „ 33. Obliteration below stephanion and at obelion.
5. ♂ „ 33. All obliterated except middle of coronal.
6. ♂ „ 33. „ „ „ „ „ „ and lower two-thirds of lambdoid.

7. ♂ *æt.* 34. Obliteration below stephanion and at obelion.
8. ♀ „ 34. All patent.
9. ♂ „ 34. Obliteration below stephanion and at obelion.
10. ? „ 35. (Bengalee, R.C.S.) All obliterated.
11. ♀ „ 35. All patent.
12. ♂ „ 36. Obliteration below stephanion, obelion, and most of lambdoid.
13. ♂ „ 37. All patent.
14. ♀ „ 38. Obliteration below stephanion only.
15. ♂ „ 38. „ at obelion „
16. ♂ „ 39. „ below stephanion „
17. ♀ „ 39. „ at obelion „

These indicate that between 30 and 40 there is usually some obliteration below the stephanion or at the obelion or both. The evidence that the stephanion is the earliest point to close is more marked than in the last list.

Nos. 3, 8, 11, 14 and 17 (the only females), taken in conjunction, make us suspect that female skulls close later than males as far as their ectocranial surface is concerned. This agrees with Picozzo's experience.

ECTOCRANIAL SUTURES. Between 40 and 50.

1. ♂ *æt.* 43. Obliteration at obelion only. (Metopic patent.)
2. ? „ 44. (R.C.S.) Obliteration below stephanion, all sagittal and upper part of lambdoid.
3. ♀ „ 44. Obliteration below stephanion and at obelion.
4. ♂ „ 44. All patent.
5. ♂ „ 45. Obliteration below stephanion and at obelion.
6. ♂ „ 45. „ „ „ only.
7. ♀ „ 45. „ „ „ „ (very thin skull).
8. ♂ „ 45. „ „ „ „
9. ♂ „ 45. „ „ „ „
10. ♂ „ 46. „ „ „ „
11. ♀ „ 47. All obliterated.
12. ♀ „ 48. Anterior two-thirds sagittal, lambdoid and upper one-third; metopic nearly obliterated.
13. ♀ „ 48. Evident but indistinct at stephanion and obelion.
14. ♂ „ 49. (Eugene Aram, R.C.S.) Obliterated at stephanion and obelion; lambdoid patent.
15. ♂ „ 49. Obliterated below stephanion and at obelion.
16. ♂ „ 50. „ „ „ only.

Among these 16 skulls there is only one which shows no obliteration at all, whereas in the last decade there were 5 out of 17 in which no closure was seen. It is remarkable how often the whole sagittal suture is patent ectocranially; this is in marked contrast to Picozzo's statement, that between 41 and 50 the sagittal is almost always closed in males except at the anterior part.

ECTOCRANIAL SUTURES. Between 50 and 60.

1. ♂ *æt.* 51. All patent (metopic ditto).
2. ♀ „ 51. Obliteration below stephanion and at obelion.
3. ♂ „ 51. „ „ „ „ „
4. ♀ „ 52. „ „ „ „ „
5. ♂ „ 52. „ „ „ only.
6. ♀ „ 52. „ „ „ and upper half lambdoid.
7. ♀ „ 53. „ „ „ and obelion and upper quarter of metopic.
8. ? „ 54. Obliteration below stephanion and at obelion.
9. ♀ „ 59. „ „ „ „ „
10. ♂ „ 59. All obliterated except coronal above stephanion.
11. ♀ „ 60. Obliteration at obelion only.
12. ♂ „ 60. „ below stephanion only.

In this decade it is still the usual thing to find the suture open except at the stephanion and obelion, but there is one example of their being completely unobliterated as far as the outside of the skull goes, and one of their being completely closed.

ECTOCRANIAL SUTURES. Between 60 and 70.

1. ♂ *æt.* 61. Obliteration complete in lambdoid and below stephanion; coronal and sagittal feebly marked.
2. ♂ „ 61. Obliteration below stephanion, at obelion, and lambdoid in its upper quarter.
3. ♂ „ 61. Faint traces of all (including metopic) except stephanion and obelion.
4. ♂ „ 62. Obliteration complete except upper part of coronal (thick skull).
5. ♂ „ 62. Obliteration below stephanion and at obelion.
6. ♂ „ 63. „ „ „ posterior two-thirds of sagittal.
7. ♂ „ 63. „ „ „ and obelion.
8. ♀ „ 64. „ at lower two-thirds coronal, posterior half sagittal, and upper one-eighth lambdoid.
9. ♂ „ 65. Obliteration below stephanion and at obelion.
10. ♂ „ 67. „ „ „ and at upper part of coronal; all sagittal and upper half of lambdoid.
11. ♂ „ 68. All obliterated, including parieto-mastoid.
12. ♂ „ 68. Obliteration below stephanion and upper part of coronal, obelion, and all lambdoid.
13. ♀ „ 69. Obliteration below stephanion and obelion.
14. ♀ „ 70. „ „ „ „ „ (lambdoid singularly patent).

15. ♂ *æt.* 70. Obliteration at stephanion and upper part of coronal, all sagittal and upper half lambdoid.
16. ♂ „ 70. Sutures almost invisible, stephanion and obelion quite so.
17. ♂ „ 70. All obliterated except one-fifth coronal.
18. ♂ „ 70. Obliteration at obelion and upper and lower one-third of coronal.

In this decade a very marked increase in the obliteration of the sutures takes place, and it is exceptional to find only the stephanion and obelion obliterated. Where the sutures are visible they are usually very shallow, though this is difficult to indicate in a table.

Ectocranial Sutures. Over 70.

1. ♂ *æt.* 71. Obliteration below stephanion and all sagittal.
2. ♀ „ 71. All patent.
3. ♀ „ 73. Upper half coronal, middle of sagittal, and lambdoid feebly marked, others obliterated.
4. ♀ „ 73. Faint trace of coronal just above stephanion, also of sagittal, others obliterated.
5. ♀ „ 73. Obliterated below stephanion, others patent.
6. ♀ „ 85. All obliterated except lambdoid just above asterion.

Nos. 2 and 5 are examples of how late the sutures sometimes are in becoming obliterated on the surface of the skull.

Entocranial Sutures. Below 30.

1 (1). ♂ *æt.* 17. All patent.
2 (3). ♂ „ 18. „ „
3 (4). ♀ „ 19. „ „
4 (5). ♀ „ 25. „ „
5 (6). ♀ „ 26. „ „
6 (7). ♀ „ 27. „ „
7 (8). ♀ „ 27. „ „
8 (9). ♀ „ 30. „ „
9 (10). ♂ „ 30. Lower half coronal obliterated. Metopic obliterated.
10 (11). ♀ „ 30. All completely obliterated.

This record corresponds very closely with that of the ectocranial sutures below 30, but points to the fact that at this early age obliteration may be complete and, if it is present at all, is more advanced than on the outer surface.

Entocranial Sutures. Between 30 and 40.

1 (1). ♂ *æt.* 31. Coronal obliterated in upper inch. Sagittal obliterated except close to lambdoid.

2 (2). ♂ æt. 31. Coronal scarcely recognisable, slight obliteration at obelion.
3 (3). ♀ „ 32. Coronal and sagittal obliterated.
4 (4). ♂ „ 33. Coronal obliterated below stephanion and upper half, also posterior half sagittal.
5 (5). ♂ „ 33. All obliterated.
6 (6). ♂ „ 33. „ „
7 (8). ♀ „ 34. Coronal obliterated in upper one-third, others patent.
8 (9). ♂ „ 34. Coronal obliterated except at middle point; sagittal obliterated at middle.
9 (11). ♀ „ 35. Obelion alone obliterated.
10 (12). ♂ „ 36. Lower half coronal, posterior half sagittal, all lambdoid obliterated.
11 (13). ♂ „ 37. Only obliterated below stephanion.
12 (14). ♀ „ 38. Lower half coronal only obliterated.
13 (15). ♂ „ 38. Only patent for 1 inch from lambdoid in all three directions.
14 (16). ♂ „ 39. Only obliterated below stephanion.
15 (17). ♀ „ 39. Coronal and sagittal quite obliterated. Lambdoid patent.

In these fifteen skulls there is not one in which some obliteration has not occurred.

ENTOCRANIAL SUTURES. Between 40 and 50.

1 (1). ♂ æt. 43. Posterior inch of sagittal and lambdoid patent (others, including metopic, obliterated).
2 (3). ♀ „ 44. All obliterated.
3 (4). ♂ „ 44. Lower two-thirds coronal and upper three-fourths lambdoid obliterated.
4 (5). ♂ „ 45. All obliterated except 1 inch from lambda in all three directions.
5 (6). ♂ „ 45. Lower three-fourths coronal obliterated.
6 (7). ♀ „ 45. Only lambdoid and middle of sagittal patent.
7 (8). ♂ „ 45. Stephanion and small part of middle of lambdoid obliterated.
8 (9). ♂ „ 45. Lower half coronal only obliterated.
9 (10). ♂ „ 46. Upper two-thirds coronal and upper quarter lambdoid alone patent.
10 (11). ♀ „ 47. All obliterated (stephanion and obelion faintly seen).
11 (12). ♀ „ 48. Sagittal, lower two-thirds coronal, and lower half metopic obliterated; lambdoid patent.
12 (13). ♀ „ 48. Only obliterated below stephanion.
13 (14). ♂ „ 49. Coronal, sagittal, and middle of lambdoid obliterated.
14 (15). ♂ „ 49. Obliterated for some distance near stephanion and obelion.

All these skulls show some obliteration internally, though there is only one in which it is complete.

ENTOCRANIAL SUTURES. Between 50 and 60.

1 (1). ♂ *æt.* 51. Upper one and half inch coronal and metopic, anterior one and half inch sagittal patent (obliteration more complete on L. than on R).
2 (2). ♀ „ 51. All obliterated.
3 (4). ♀ „ 52. Sagittal alone patent except at obelion.
4 (5). ♀ „ 52. All obliterated.
5 (7). ♀ „ 53. „ „ except upper two-thirds lambdoid.
7 (9). ♀ „ 59. „ „
7 (10). ♂ „ 59. „ „
8 (11). ♀ „ 60. „ „ except posterior 2-inch sagittal and upper 1-inch lambdoid.

Complete obliteration is much more common in this decade, and complete patency is not found at all.

ENTOCRANIAL SUTURES. Between 60 and 70.

1 (1). ♂ *æt.* 61. All obliterated.
2 (3). ♂ „ 61. „ „
3 (4). ♂ „ 62. „ „
4 (5). ♂ „ 62. „ „
5 (6). ♂ „ 63. „ „
6 (7). ♂ „ 63. „ „
7 (8). ♂ „ 64. „ „
8 (9). ♂ „ 65. „ „
9 (12). ♂ „ 68. „ „ (except posterior part sagittal).
10 (17). ♂ „ 70. „ „
11 (18). ♂ „ 70. „ „

In this decade the complete obliteration is very marked.

ENTOCRANIAL SUTURES. Over 70.

1 (1). ♂ *æt.* 71. All obliterated.
2 (2). ♂ „ 71. „ „
3 (3). ♂ „ 73. „ „
4 (4). ♀ „ 73. „ „
5 (5). ♀ „ 73. „ „
6 (6). ♀ „ 85. „ „

This, with the last record, makes it evident that after 60 all the sutures inside the skull are obliterated.

CONCLUSIONS.

We quite agree with Dwight that closure of sutures may occur in a healthy skull before 30, though it is rare, and, for practical purposes, the absence of any internal obliteration would fix the probable age at less than 30.

Over 30 there is always a fair amount of obliteration of the coronal and sagittal sutures internally, while over 50 usually, and over 60 always, all the entocranial sutures are obliterated.

The ectocranial sutures are so variable that no estimate of age should be made from them when the inside of the skull can be looked at, and the fact that so few Museum skulls are opened detracts very much from the practical value of many of our great collections.

With regard to the place at which ossification usually begins, Dwight is doubtful whether it is below the stephanion or at the obelion, though he rather favours the latter place, and other authors seem divided in their opinions. Our own evidence makes us think that somewhere in the lower half of the entocranial aspect of the coronal suture obliteration usually commences, and that this is followed very rapidly by external obliteration of the same suture below the stephanion where the temporal ridge crosses it.

The sagittal suture seems to close internally about the region of the obelion, and soon afterwards at its anterior part, the posterior inch sometimes remaining patent after all the rest is obliterated. There can be no doubt that the accepted statement that the suture first closes externally at its simplest part, *i.e.*, at the obelion, is correct, though this is subsequent to the internal appearance of obliteration, and is often delayed till old age is reached. Picozzo says that in the male the obelion first closes, and in the female the middle of the sagittal suture, but if he is referring to the outside of the skull all our evidence goes against this statement as far as females are concerned.

The lambdoid suture closes later than the coronal and sagittal as a rule; this we are not surprised to find, when we remember its markedly serrated appearance. As far as the three sutures with which we have already dealt are concerned, the rule seems to be that the simpler the suture the earlier its closure, and this holds good with the spheno-parietal and spheno-frontal sutures, which are always closed when closure has occurred beneath the stephanion, though it does not apply to the squamous suture, which closes very late, if at all. Taking the entocranial closure of the lambdoid, we find that, out of twenty-six skulls below 40, it is only closed in five. After 40 closure is more usual, and a careful review of our records makes us believe that obliteration generally begins about midway between the lambda and the occipito-mastoid articulation, and that the upper part near the lambda closes last. On the outside of the skull the closure of this suture is later, and the upper part is often the earliest to close, thus bearing out Dwight's contention that the ecto and entocranial points of obliteration do not necessarily correspond. We have no evidence, on the other hand, that Dwight's statement that, when the sutures close late, the lambdoid is usually in advance of the coronal ectocranially, is correct.

In our eighty-two skulls six showed signs of a metopic suture, and the evidence of this small number shows that, as in other sutures, entocranial precedes ectocranial closure. Apparently internal obliteration begins at the lower part. It is sometimes taught, though we are unable to trace the statement to its source, that when the metopic suture fails to close at its usual time it is the last of all to be obliterated. Our records, as far as they go, do not induce us to place much reliance on this.

With regard to the side on which closure first begins, Sauvage ("Sur l'état sénile du Crane," *Bulletin de la Soc. d'Anthropologie*, Paris, 1870) says that both in the coronal and lambdoid sutures the right closes before the left. In our records there are only two in which the obliteration has been caught in a unilateral condition, and in both these it is the left side on which it is commencing. We are in agreement with Picozzo that male skulls are obliterated somewhat earlier than female.

NOTES ON THE GREAT ZIMBABWE ELLIPTICAL RUIN.

By Franklin White, Local Correspondent of the Anthropological Institute.

[Presented May 23rd, 1905. With Plates VII-IX.]

These ruins are situated in Southern Rhodesia, about 20 degrees 16 minutes 30 seconds south latitude and 31 degrees 7 minutes 30 seconds east longitude according to Mr. R. W. M. Swan.

They are first referred to in the records of the Portuguese explorers of the sixteenth century, but the accounts are apparently based on distorted reports made by Arab traders who had penetrated into the interior.

No well-authenticated inscription or written characters have been found either in these or in other ruins of a similar description in Rhodesia. An important clue is therefore wanting, which if found would assist in forming an opinion as to the race which built them and to their probable age.

It is as well to mention here that several of the reported discoveries made are not worth attention. Mr. Bent gives a representation of a fragment of soapstone with "an attempt at lettering in some form." The author has been informed by a reliable authority that some if not all of these lines are recent scratchings most probably made by some one in Mr. Bent's escort.

Certain Roman coins supposed to have been found near Umtali were in reality brought from England by their owner, who on hearing that this idea was current wrote a contradiction to the local paper.

About a year ago a discovery was reported, also from Umtali, of golden bowls, bracelets, rings, etc., inscribed with Phœnician characters. These articles were submitted to the inspection of officials of the British South Africa Company in Salisbury, who pronounced them to be merely copper and brass articles probably belonging to coolies who may have been employed in garden work.

Doubt has even been cast on the authenticity of the celebrated wooden bowl with carved zodiacal figures and the crocodile, reported as having been found in a cave near Zimbabwe. A reference was made to this by the Editor of the *Bulawayo Express* early in March, and the Rhodesia Scientific Association will investigate the matter thoroughly so as to settle it one way or the other.

This group of ruins is the most important yet discovered. The area occupied, the solidity of construction, the peculiar form and arrangement of some portions, and the different objects which have been found, apparently indicate that the Elliptical Ruin at all events was built for a special purpose and on a definite, although somewhat crude, plan. Other ruins, built of the typical granite blocks without mortar, show equal, if not greater, care in construction, are more decorated with ornamental stonework, and cover a nearly equal area, but none equal this ruin in solidity and completeness.

The excavations and clearings around and in this ruin, made for the British South Africa Company by Mr. R. N. Hall, afford greater facilities for making a more accurate survey than has before been possible. This paper, the plan, and photographs are therefore laid before the Institute in the hope that some assistance will be given by its means to those whose experience and studies qualify them to form conclusions as to whether the design and construction indicate a notable degree of civilisation or religious culture, whether it is a degenerate copy of a better type existing elsewhere, or whether the form, decorations and position are only the accidental resultants of the necessity for the erection of some form of fortified place of habitation and of the natural desire common to all people of embellishing their dwellings by some sort of ornamental work.

Mr. F. P. Mennell, curator of the Rhodesia Museum, was the first to publish a definite statement that the generally accepted measurements of the celebrated cones or towers were incorrect. The author of this paper, therefore, visited the ruin in October of 1903 in order to make a new and complete survey as far as the new work of excavations had made it possible. Some difficulty was experienced in measuring over heaps of stones and ruined walls, but the final working out of the survey shows a discrepancy of but six inches in the triangulation of the outside, a result sufficiently close for all practical purposes. The curvature of the outside of the walls was obtained by offsets not more than ten feet apart from the main triangulation lines. The interior was surveyed by compass traversing. A steel tape and chain, each 100 feet in length, were used.

The variation of the compass at that date was ascertained to be 17 degrees 24 minutes west of the true north, and steel pegs 103 feet 3·37 inches apart, driven in the ground and covered with heaps of stones; 90 feet west of the Western Entrance, indicate the extremities of a line extending true north and south.

A comparison of the new plan with that given by Messrs. Bent and Swan, shows that the line of true north corresponds very closely. A line drawn to the south from the main or north entrance crosses the southern outer wall according to Bent's plan at a point 12 feet from the centre of the western entrance to the tower or cone enclosure. The new survey shows 11 feet, or a difference of 1 foot. The distance between the outsides of the walls on this line is 251 feet 6 inches in the former survey as against 251 feet 2 inches in the latter. The curves of the walls and positions of the different enclosures compare very closely in both plans west of this line, but to the east there are notable differences. The maximum length of the ruin by the new survey is 292 feet. Sir John Willoughby makes it 294 feet, while Bent and Swan show 286½ feet on their plan, and 280 feet on page 105 of the *Ruined Cities of Mashonaland*. The maximum width according to the same plan is 220 feet, 216 feet and 235 feet.

The distance apart of the centres of the entrances to the cone enclosure is given by Bent, and also shown on his plan as 107⅘ feet; the new survey gives 112½ feet.

These notable differences all exist to the east of a line true south from the north entrance, and the effect has been to make the plan agree more closely than is really the case with a theory based on the supposition that the circumferences of the towers, lengths of radii of certain arcs and curves of the wall and position of an altar, were all in accordance with a system of measurements based on the cubit of 20·62 inches.

General Description and Form of the Ruin.

The paper and the plan are only intended to give a general description of the leading features and also of the lines of the foundations of the walls, in order to assist in forming opinions as to whether a distinct scheme of orientation was carried out and whether the curvature, proportion and positions of certain parts show sufficient excellence to warrant their being taken as a basis for reliable astronomical and geometrical calculations.

The walls, interior divisions, towers, buttresses and doorways are built without mortar, of the usual roughly rectangular blocks of granite varying in length from 5 inches to 12 inches and in thickness from 2 inches to 8 inches. Some walls were faced with cement or plaster work 4 inches to 6 inches in thickness, up to a height of perhaps 6 feet.

A close examination shows that the workmanship is not of such excellent character as the first view leads one to expect. The courses vary in thickness considerably, and the true level would thus be lost, and false courses, or two being replaced by one, are by no means uncommon. Even under the chevron pattern work, where the wall is supposed by some to be at its best, seven instances of this can be seen under the south-west end, in a total of 42 courses.

The batter of the walls varies without any apparent reason, and the curvature is seldom well carried out for more than ten yards.

The outer wall at the north-west end of the ruin is certainly not so thick or so carefully built as the portion from the north entrance southwards and round to the south-west, but an inspection of the photographs will show the change is very gradual; nothing indicating where any work of construction or rebuilding may have commenced.

The form of the ruin can only be called roughly elliptical. The maximum length is 292 feet on a line bearing 35½ degrees south of east. The mean longer axis of the figure would apparently bear 45 degrees south of east. The greatest width is 220 feet on a line bearing 52¾ degrees north of east, but the mean shorter axis would be more nearly 49 degrees north of east.

The total measurement round the outside of the building at the base of the walls is 831 feet 9 inches.

The greatest defect in the curvature of the outer wall is due to a curious break between the north and north-west entrances. On the west side of the north entrance, the wall is 12½ feet thick. It then narrows rapidly until at 35 feet distant, it is 8½ feet thick, and the outer face varies from the curvature necessary to bring it round to the wall from the north-west entrance. These two portions of the wall do not correspond, the foundations, as far as they were then uncovered, showing a break of 4 feet 3 inches in two steps back. There appears to be an unfilled space of about 2 feet between the stones of the bottom courses of the two portions. To the ordinary observer, it appears as if the workmen had lost their line and finished up as best they could.

A striking feature of the outer wall is the double row of chevron (or inverted V) patterns which runs about five courses below what was apparently the original top of the wall on the south-eastern end. The length from point to point, measured on the curve, is 266 feet. The straight distance from point to point is 202 feet 9·6 inches on a line bearing 32½ degrees east of north.

The south-western end of the pattern finishes at a point just outside the western side of the wall, forming the western end of the cone enclosure.

A number of irregularly-shaped blocks or narrow slabs of stone about 2½ feet high, apparently stood on the top of the wall at the south-east end of the ruin. Eighteen are now more or less upright, and six appear fallen. They are very irregularly spaced, the distances apart varying from 3 feet to 6 feet. The south-western block or monolith is 27 feet beyond the end of the chevron pattern, while the north-eastern block is 11 feet short of the point where the pattern finishes. The western monoliths are at a greater distance apart. The total length of wall on which these stone pillars are now standing is 270 feet.

The width of the walls at the base is about 15½ feet near the north entrance—12½ feet behind the large tower—9 feet at the west entrance, and about 8½ feet at the north-west entrance.

The top is 6 feet 7 inches wide near the south-western monolith, 8 feet 4 inches behind the large tower, and 9 feet 6 inches at the north-eastern monolith.

The original maximum height of the wall was probably about 32 feet.

A large enclosed area lies to the north-west of the elliptical ruin, and the wall runs nearly parallel with that of the main ruin forming a passage about 120 feet in length and 3½ feet in width at the narrowest part. A little to the north of the entrance to the main ruin, the wall of this outer enclosure turns off to the north-east, and, together with a wall which commences against the main ruin, forms a long narrow passage leading to the group of ruins in the valley below. The entrance to the main ruin is thus well protected, and it is possible that the peculiar angle formed by this entrance was designed so as to make an easy turn.

At 134 feet from the centre of the main entrance, going westwards, another wall about 4 feet thick, but now considerably destroyed, starts from the main wall and, running in a north-westerly direction, no doubt eventually joined what is known as No. 1 ruin. The north-west entrance would, therefore, be enclosed or protected against attack from the outside.

Entrances or Doorways.

There are three in the outer wall, known as the northern (or main), the north-western and the western, the distance between their centres being 87½ feet and 171½ feet respectively.

The writer is of opinion that these entrances were originally covered over, the wall above them being carried on without a break on strong stone or wooden lintels. The sides of the entrances still rise nearly vertically to 5 or 6 feet, or nearly to the height required for a doorway, or where lintels would cross. The walls above this level have apparently fallen down, the line of break receding as would be the case if the lintels were suddenly removed. At the Regina Ruins forked posts have been found still in place in the main entrance, evidently for carrying the lintels or beams, and at the Dhlo Dhlo ruin entrance portions of similar posts are still visible, while in Zimbabwe itself, in the Hill Ruins, there is a rounded entrance with stone lintels still supporting the overhead wall. Bent, *Ruined Cities of Mashonaland* (page 109) referring to the central entrance, says "the lintel of which had consisted of wooden beams which had been burnt, and on their giving way, the wall above had also fallen down." The same author (p. 238) cites de Barros, the Portuguese writer 1552, as follows:—"Over the gate of the building is an inscription which neither the Moorish traders who were there, nor others learned in inscriptions could read, nor does anyone know in what character it is written." A continuous, unbroken wall would be stronger than one in several sections, and it would be a great assistance to the defenders if they could pass to and fro without interruption round the whole circuit of the walls.

The sides of these entrances are curved, the narrowest part being in the centre, the widths between the stonework at that point being—main entrance, 29½ inches, north-west entrance, 29 inches, and the west entrance 45 inches.

The main entrance is a very fine piece of work, the curves being carefully built. Six steps lead up from the level of the outer passage, each one with a greater curvature to coincide with the rounding in of the side walls.

None of these entrances have what are generally called "portcullis grooves," a term to which exception can be taken, as it infers an elaborate arrangement of sliding doors, which there is no reason to believe ever existed. In each side of many entrances of minor importance, or in semicircular buttresses, evidently made to narrow the passage ways, vertical V grooves have been left, evidently to receive cross pieces of wood or slabs of stone which could be slipped in and a strong barricade formed. In some cases, however, there is but one groove in the end of a rounded wall, probably made to receive a vertical post or one of the carved soapstone beams (see photograph, page 430, Hall's *Great Zimbabwe*). This may have been a sign that some person of importance lived in that place, or correspond to the carved posts of the North American Indians.

Inside the outer walls of the ruin are numerous smaller enclosures, passages, and ends of walls, the object of which can only be conjectured. They are not, however, of special interest, and have little or no bearing on the points referred to in the commencement of this paper. A reference can, however, be made to the long passage, which, commencing at the north entrance, follows the inner face of the main wall south-east and southwards, a distance of 190 feet to the buttresses or obstructions forming the entrance to the enclosure in which the cones or towers are situated. At the narrowest part it is but 22 inches in width at the cemented floor, the wall on the outer side reaching a height of 31½ feet.

There are two cones or towers in the enclosure mentioned; one is small, and nearly a true circle at the base, where it measures 6 feet 10·8 inches in diameter, or 21 feet 6 inches in circumference. No complete measurement can be taken at the base of the large tower, as on the north-western side the floor level is 3½ feet higher than on the south-eastern side. At that height however (3½ feet), the circumference is 54 feet 10¾ inches (54·864 feet) equal to a mean diameter of 17·463 feet. Bent and Swan, in the *Ruined Cities of Mashonaland*, give the diameter as 17·17 feet "at the base."

In order to be able to make a calculation of the diameter at the base, the batter was carefully taken at every 5 feet round the tower, and by construction the circumference at the level of the lowest course was found to be 56 feet 1·87 inches, equal to a diameter of 17·875 feet. The battering varies considerably, the greatest being 4⅝ inches in 35 inches and the least 1⅛ inches in 42 inches. Even if the tower commenced on a truly circular foundation, this difference in batter would soon make it irregular and the survey shows that this is the case. The distance between the centres of the towers is 17 feet 5 inches. Mr. R. N. Hall kindly assisted in taking the measurements made of the circumferences of these towers. The distance in a straight line between the centres of the doorways of the enclosure in which the cones are situated is 112 feet 6 inches.

In the *Ruined Cities of Mashonaland,* Messrs. Bent and Swan have worked up a theory that I will briefly summarise as follows:—

The buildings were erected on a scale of measurements based on the Egyptian cubit of 20·62 inches, this being proved by the coincidences that the circumference of the small tower and the diameter of the large tower were both exactly 10 cubits or 17·17 feet, and that the centres of the two were practically that same distance apart.

The builders were well acquainted with geometry. They were aware of the ratio of diameter to circumference, as shown by the measurements of the two towers, and also by the distance apart of the centres of the two doorways, viz., 107·8 feet, which was equal to 17·17 feet (the circumference of the small and also the diameter of the large tower) multiplied by 3·1416 and then by 2.

The taper of the two towers is on a circular curve with radius, equal to twice the diameter multiplied by 3·14.

The decorated portion of the wall is composed of two arcs struck with a radius of 107·8 feet, and the angle formed by connecting the two extremities of the decorated portion and the centre of the radii of these arcs is exactly 120 or $\frac{1}{3}$ of a complete circle.

Their knowledge of astronomy was proved by the fact that a line drawn from this centre point passing through the eastern doorway would be 24° to the south of east or the line of sight to the sun, when rising behind the hills at the summer solstice, the same point would also be exactly due south of a line drawn through the somewhat peculiarly designed main entrance.

Their religious ideas are supposed to be shown by the employment of the chevron pattern, which is considered to correspond with the Egyptian symbol for water or fertility, and by the fact that this pattern was placed so accurately that the rising sun illumined that part and that part only of the wall where it existed. These points, together with the fact that an altar had been probably located at the centre point already referred to, were considered to indicate that the sun was an object of worship.

The conical towers, stone monoliths, carved soapstone beams, etc., were considered as proofs that nature worship was to a large extent present in their religious beliefs. The final inference arrived at was that this was all valuable and confirmatory evidence that the builders were of a Semitic race, and of Arabian origin. On investigation it will be found that these arguments have little or no real foundation.

The cubit theory is thrown out altogether by the facts. The circumference of the small cone does not measure 10 cubits or 17·17 feet, but 21·5 feet. Neither does the circumference nor the diameter of the large tower correspond to the cubit measurement. The distance between the centres of doorways instead of being 107·8 feet, a measure which should be equal to 62·82 cubits (or 10 × 2 × 3·1416) is 112·5 feet or 65·47 of these cubits.

The curves of the outer and decorated portion of the outer wall do not conform either to radii of 107·8 feet or 112·5 feet, and the distance from the ends of the decorated arcs to the centre point will not correspond with the line true south from the main or north entrance. The taper of the towers does not conform to the curve given. The claim, therefore, that the building displays evidence of architectural proficiency is not borne out by the facts. The theory that the sun worship had reached an advanced stage rests on very weak foundation.

It is asserted that only the decorated portion of the wall is illuminated, tangentially, by the rays of the rising sun at a given date, this line being 24° south of east. This would of necessity place the points at a distance apart which must be at least equal to, and possibly be more than, the width of the ellipse at the narrowest part. Bent's plan gives this as 235 feet, the latest survey gives 220 feet, whereas the distance from point to point of the chevron pattern is but 202·8 feet.

The chevron pattern is one amongst many types which can be seen on the walls of the different ruins. There is nothing uncommon about it as a style of ornamentation, and it is seen on several ruins facing south-east, north-east, west and south-west. It seems reasonable to ask why are not the other styles of decoration, known as the herringbone, the chessboard and the sloping block, considered to represent some other of the ancient Egyptian symbols.

It appears, therefore, that the assertions to which I have referred are not borne out by the results obtained from the latest carefully made survey. The inaccuracies are of course no proof that the ancient builders were not either Semitic or Sun and Nature worshippers. The latter two points can, I think, be conceded with the understanding that their worship and their knowledge of astronomy were of a very crude character. As builders, they can be credited with having erected some remarkably substantial works, but their plans are quite wanting in symmetry or in evidence of careful design.

This contribution to the records of the Institute does not pretend to solve the problem of who the builders were, and when and why they built these structures, but the author trusts that the notes and plans may be of assistance to others who have had opportunities of studying similar subjects in other countries in making comparisons which may perhaps furnish the desired clue.

THE ZIMBABWE ELLIPTICAL RUIN.

Comparison of measurements obtained in the recent survey with those given by Messrs. Bent and Swan in their writings and plan.

	New Survey.	Bent and Swan.		
		Book.	Plan.	Page.
	ft. in.			
Line to rising sun at summer solstice	—	24° 0′	25° 45′	160
Maximum length of ruin	292 0	ft. in. 280 0	ft. in. 286 0	105
Maximum width of ruin	220 0	—	235 0	–
Centre, west entrance to north entrance	183 6	—	189 6	—
Centre, west entrance to centre of wall forming west doorway of tower enclosure	180 0	-	181 6	-
Centre, west entrance to monolith M.	89 6	—	91 0	-
Outsides of walls, on line true N. and S.... ...	251 9	-	251 6	
Same line, inside measurement	219 0	- -	217 0	—
Centre of wall or west doorway of tower enclosure lies west of N. and S. line	11 0	- -	12 0	—
Monolith M to point K	180 0	—	184 0	—

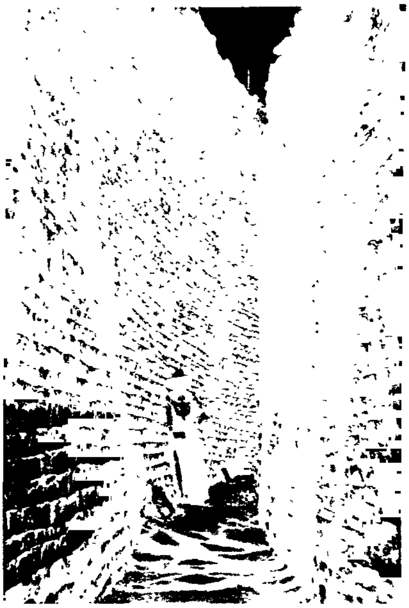


FIG. 1.—PARALLEL PASSAGE, GREAT ZIMBABWE.

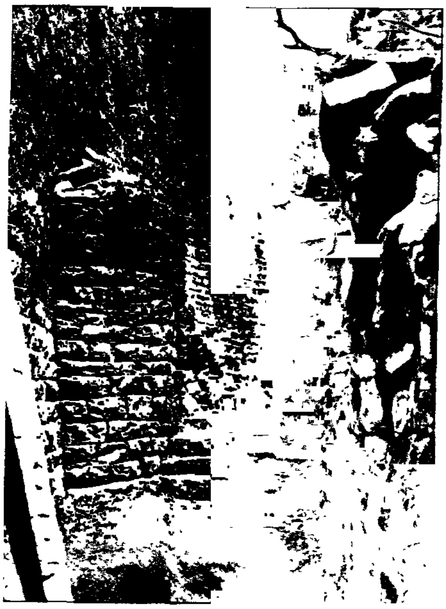


FIG. 2.—EAST DOORWAY IN PASSAGE, GREAT ZIMBABWE.

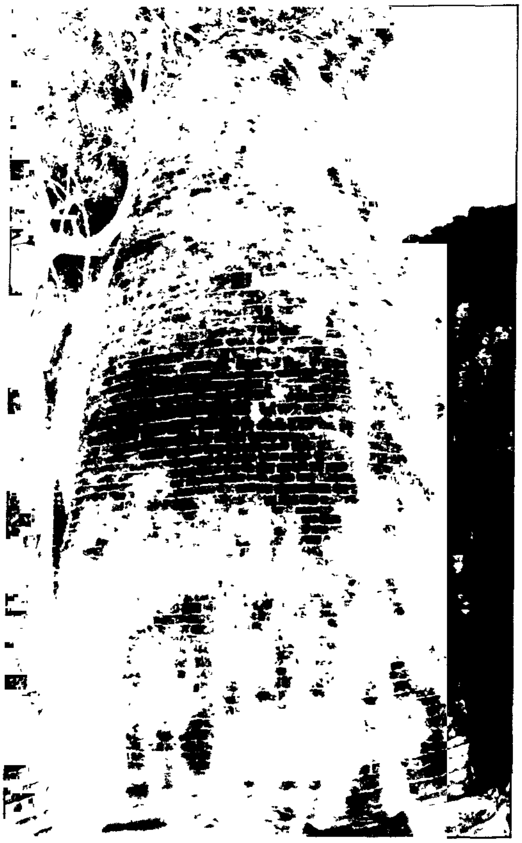


FIG. 3.—LARGE CONICAL TOWER, GREAT ZIMBABWE.

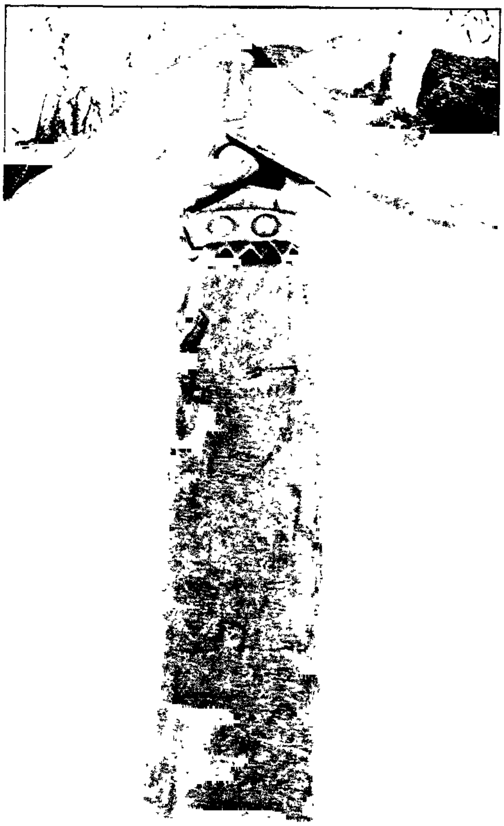


FIG. 4.—SOAP-STONE BEAM.

NOTES ON THE GREAT ZIMBABWE ELLIPTICAL RUIN.

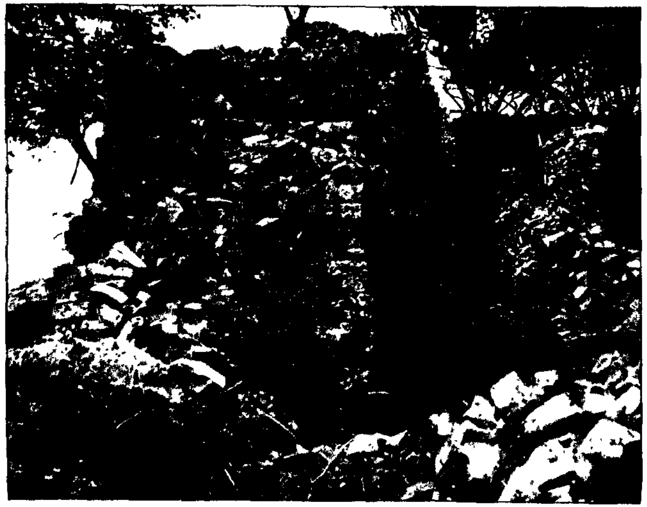


FIG. 1.—SOUTH SIDE OF GAP, IN WALL, NEAR MAIN ENTRANCE, GREAT ZIMBABWE.

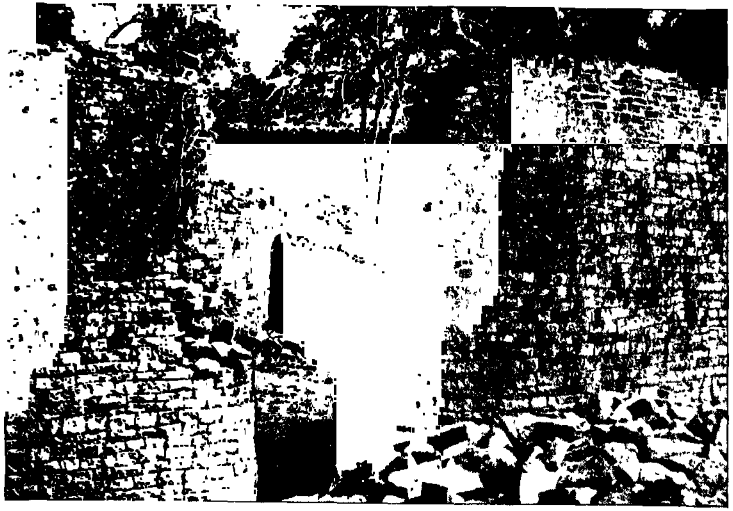


FIG. 2.—NORTH-WEST ENTRANCE, GREAT ZIMBABWE.

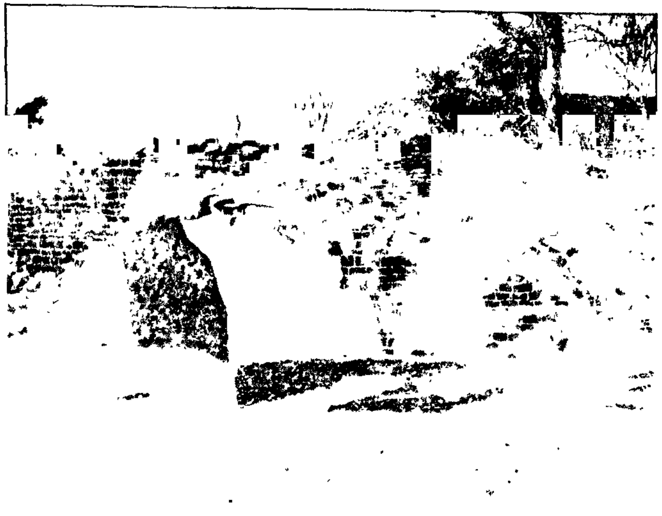


FIG. 3.—MONOLITHS NEAR WEST ENTRANCE, GREAT ZIMBABWE.

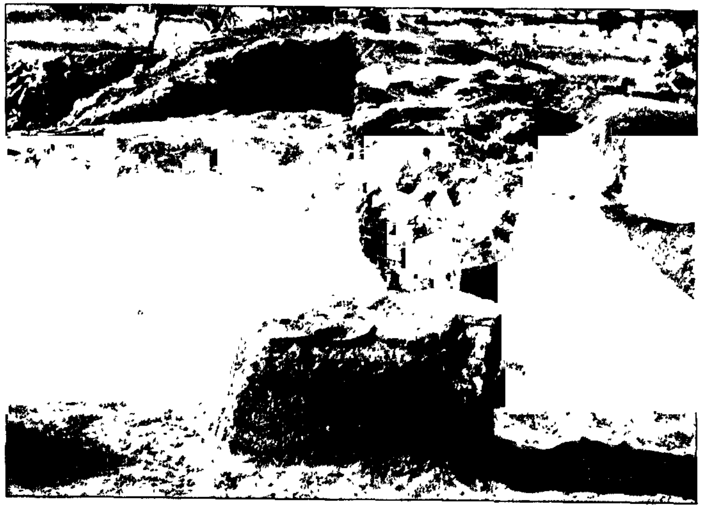
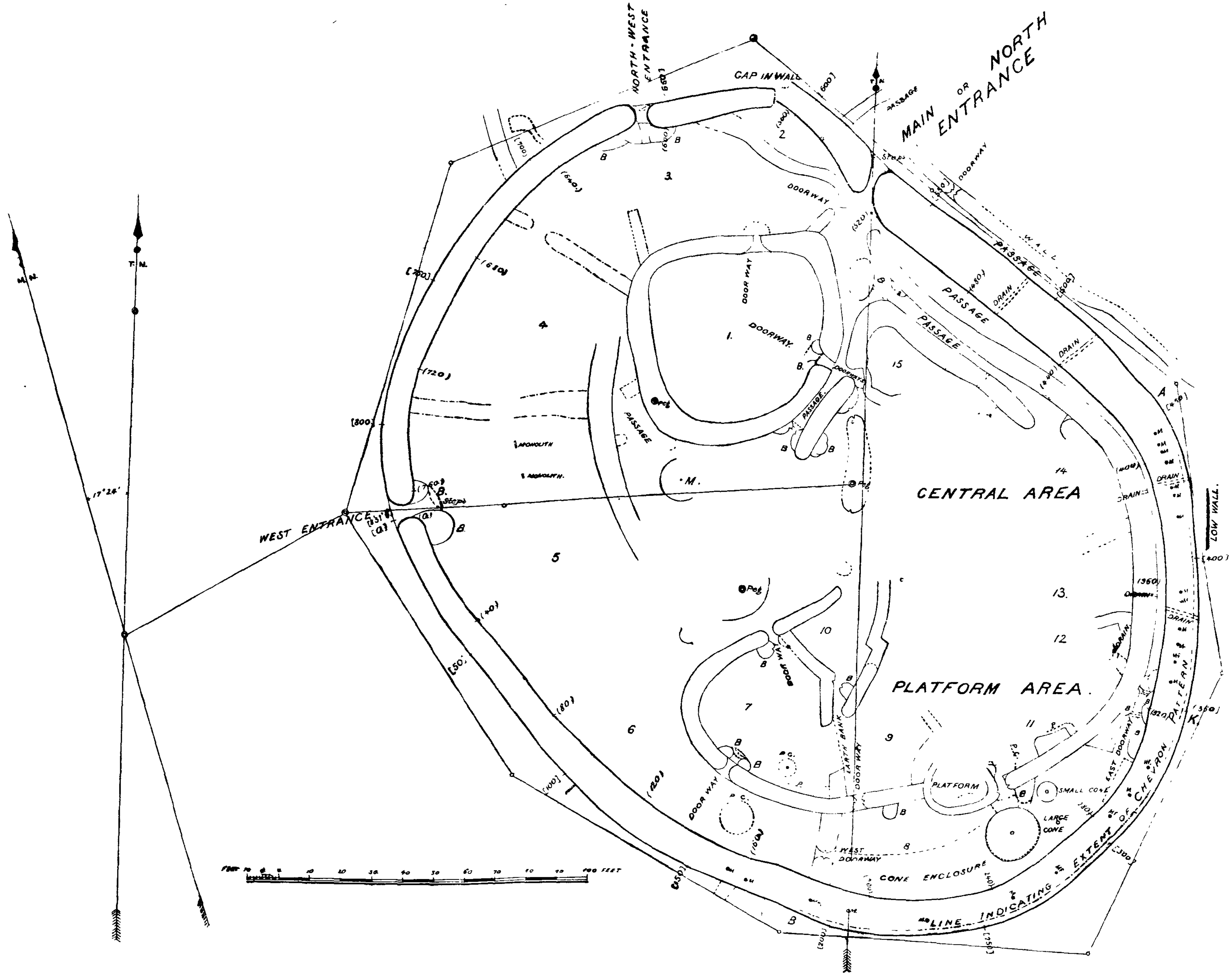


FIG. 4.—CEMENT-COVERED STONE-WORK, VALLEY RUINS.

NOTES ON THE GREAT ZIMBABWE ELLIPTICAL RUIN.

Journal of the Anthropological Institute, Vol. XXXV, 1905, *Plate IX.*



PLAN OF THE TEMPLE.

NOTES ON THE GREAT ZIMBABWE ELLIPTICAL RUIN.

	New Survey.		Bent and Swan.				
			Book.		Plan.		Page.
	ft.	in.	ft.	in.	ft.	in.	
Monolith M to centre of large tower	156	6	—		145	0	—
End to end of chevron pattern	202	9·6	—		197	6	—
Measurement round chevron pattern	266	0	—		245	0	—
A to K, chevron pattern	106	0	107	0	102	6	403
K to B, chevron pattern	138	6	129	6	129	4	403
Centre to centre, doorways tower enclosure ...	112	6	107	$\frac{1}{5}$	107	6	152
From supposed altar to A	—		107	$\frac{4}{5}$	110	0	152
,, ,, ,, K	—		107	$\frac{4}{5}$	113	0	152
,, ,, ,, B	—		107	$\frac{1}{5}$	113	0	152
Large tower, diameter	17	10½	17	2	—		156
,, ,, circumference	56	1·8	54	0	—		156
Small tower, diameter	6	10·8	55	4	—		403
,, ,, circumference	21	6	17	2	—		152
Centre to centre of towers	17	5	17	2	—		158

NOTE.—Measurements taken as at base of walls.

NOTES ON THE PHILOSOPHY OF THE BAVILI.

By R. E. Dennett.

[Presented November 8th, 1904.]

The king of the Bavili, who are the inhabitants of the kingdom of Luango, has seven titles, one of which, that of *ntawtola*, he does not receive until after his death. The other six, as I have explained elsewhere, are assigned to him as head of the six great departments of state, which we may compare to the Courts of Equity and Justice, the Church, the State, the Lords and the Commons. These six titles are, as I shall point out in a moment, closely connected with the system of philosophy which I wish to expound here in brief. I believe that above and beyond fetishism, with which I have dealt elsewhere, there is a higher form of religion among the Bavili, which is connected with certain symbols in the form of (1) sacred groves, (2) sacred lands and rivers, (3) sacred trees, (4) sacred animals, (5) omens, and (6) the seasons. The six titles of the king connect him directly with these six divisions of sacred symbols. As *nkici ci* he is, according to the native view, one of the products, or perhaps we should rather say, the end and final result of the working of the powers, the *bakicibaci*, represented by the sacred groves. As *fumu* he is the king (or chief from whom all proceed) of the symbolic lands and rivers. As *ntinu lukene* he is head of the custom of the leopard, and thus associated with the sacred animals. As *nyanga nvumba* (the doctor of the source of seasons or time) he is intimately connected with the seasons. As *xivangi* (procreator) he is at the head of the omens. And as *muene* (the overseer of the morals of his people) he presides over the sacred trees. That is, he is the chief teacher in all these branches of native beliefs.

It is possible that at one time each of the sacred symbols mentioned above had its sacred grove; in this grove, it may be, the king, as the great high priest, taught his people the lesson connected with the symbol. In support of this conjecture I may mention that I have so far in no case discovered more than twenty-four sacred symbols in any of the six divisions enumerated above; there are, it is true, certain apparent exceptions; but the supernumerary symbols can be shown to stand apart from the others for clearly defined reasons. After years of study I have discovered twenty-four trees and herbs which are, as the natives say, *nkicici*, or sacred, twenty-four sacred animals, and so on. Now if each division of sacred symbols is composed of twenty-four parts, the sum total of *nkicici* should be 144. I have, as a matter of fact, discovered upwards of ninety sacred groves. It is therefore quite legitimate to suppose that there may formerly have been 144. Not only so, but the meanings of the names of the sacred groves go to prove this supposition, as I shall show more in detail later. The most remarkable fact, however, about these groves is that the Bavili have preserved the order and grouping of twenty-four of them, and I believe that it is in this order that we find the key to their philosophy.

I cannot at present treat of all the six sets of twenty-four symbols in detail. I propose to describe the ideas connected with the groves and the seasons, through the former of which the king traces his ascent to God. Before doing this I should like to draw your attention to the seven words, compounded of two words having contrary meanings, which are found in Xivili, as they seem to me to imply that the ideas of the Bavili with regard to the symbols fall into six divisions, which we may term the formula. These words are: *Mambu-Nzambi, bungu-ntwali, nkala-nco, mania-matadi, nkonda-* or *nonga-nzau, bulu-ntu,* and *kaci-nuni.* The first of these refers to God, and stands outside the formula; we shall see that this occurs in other cases. Space will not permit me to explain the meaning of these words. I now pass on to the seasons, which are perhaps the best avenue by which the European mind can approach Bavili ideas. Before attempting to deal with the seasons, I will put briefly before you a sketch of the three fundamental ideas of Bavili philosophy.

COSMOLOGICAL IDEAS.

In the last resort the Bavili are monists; they reduce everything ultimately to a manifestation of *Nzambi.* From the abstract *Nzambi* proceed *Nzambi mpungu, Nzambi ci,* and *kici.* These three elements of the Trinity appear in Bavili philosophy as *xi, ci* and *fu* (it is desirable to note that *xi* and *ci* are respectively female and male, whereas *Nzambi mpungu* and *Nzambi ci* are male and female).

Xi means passive matter or things pertaining to the maternal principle. *Ci* is the paternal or active principle.

Let us take an example. The sea is regarded as a male principle; from it proceeds rain which falls on the earth; the earth is regarded as a female or passive principle; the rain fertilises it and causes it to bring forth fruits.

Fu is, properly speaking, habit, custom or sequence; we may perhaps express it in one word by evolution, understanding thereby rather the process by which the individual is produced than the life history of a species. In another sense it may almost be said to be the individual himself. Thus, when the rain has fallen upon the earth, it forms on the one hand springs and rivers, and on the other causes vegetation to spring up. Both the rivers and the vegetation result from the interaction of earth and sea; the process of production and the product are both *fu.*[1]

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[1] In order to prevent misconception I expressly state that these ideas are not derived directly from the natives, but from philological considerations.

These three ideas are naturally strictly abstract and out of all relation with the material universe.

Xi and *ci* having produced *fu* cease to operate; *fu* on the other hand continues. Under the name *vu* it becomes active in space and time, and may be called the cause of the material universe.

Temporal Ideas.

(*a*) *The Divisions of the Year.*

Properly speaking the year falls into three divisions, *mawalala, xicifu,* and *nvula.* Of these *mawalala* is a period of rest, *xicifu* a period of preparation, and *nvula* an evolutionary period, or period of production. Just as in the cosmological ideas we have a progression of three factors, *xi, ci* and *fu,* so in the same way in temporal ideas *mawalala* and *xicifu* produce *nvula.* Just as *fu* in its turn became a cause, so *nvula* produces *mawalala* of the succeeding year.

(*b*) *The Seasons and Months.*

Of the three divisions of the year *mawalala* is itself both a season and a month. *Xicifu* falls into two seasons of two months each, and *nvula* into four seasons of two months each. Properly speaking the seasons only exist as factors in six groups of four, the other three being in each case the two months and the product specially associated with the season. These groups of four are related just as our cosmological series *xi, ci, fu,* and *vu*; they consist of a principle, male and female causes, and a product. I now display the groups in the form of a table.

Mawalala.		Product.
Season.	Month.	
Mwici (smoke) ...	*Bulu maci mavola* (source of sweet waters) ... *Bulu maci mbu* (source of sea waters)	*Nkasa* (pea).
Bunji (mist) ...	*Bika li muanda xicifu* (to leave the valley of mist) ... ... *Muanda xicifu* (the valley of mist) ...	*Mbundubundu* (new green grass).
Mvumvumvu (drizzle)	*Kufulu nkaci* (negative desire) ... ... *Kufulu nuni* (positive desire)	*Buku* (mushrooms).

Mawalala.		Product.
Season.	Month.	
Wawawaw (rains)...	*Kaci mbangala* (negative witness) ... ... *Nuni mbangala* (positive witness)	*Kusafu* (a fruit).
Nvula nxentu (female rains)	*Bika li muanda sunji* (to leave the valley of mist) ... ... *Muanda sunji* (the valley of mist)	*Makundi* (fruit)
Nvula mbakala (male rains)	*Ndolo nkaci* ... ... *Ndolo nuni*	*Mba* (palm kernel).

During the season *mwici* the men hunt and fish, while the women gather *fubu* (leaves) for their mat and basket work. The season *bunji* is devoted to the burning of the grass, hunting, and cutting down of the forests to form new plantations, while the women busy themselves in the making of mats and baskets.

In *mvumvumvu* the men put new roofs on the houses and repair them generally while the women sow their seed and prepare to plant manioc and potatoes.

It is now that the Bavili's thoughts turn lightly to love and marriage. The word *mbangala*, which enters into the name of both the months of the *wawawaw* season, carries with it the idea of exposure and fear that causes one to run away. This is connected with the native ideas as to pregnancy. It should be mentioned that it is the correct thing for a child to be born on the first day of *mawalala*; as a matter of fact more children are born at that period of the year than any other; consequently the season we are now dealing with is associated in the native mind with the fourth and fifth months of gestation. At this time husband and wife fight shy of one another.

During *nvula nxentu* the rains bring fruit to perfection in the first month, and then ceasing in the next month, give the people the opportunity to harvest their produce.

We may now consider the genetic relations of these six groups. Denominating the groups by the names of the seasons which preside over them, *mwici* is female and *bunji* is male; their product *mvumvumvu* is regarded as female. Just as in the cosmological ideas *fu*, the effect, becomes *vu*, the cause, the female effect *mvumvumvu* is replaced by the male cause *wawawaw*. This is, however, not directly operative, but manifests itself through the secondary causes *nvula nxentu* and *nvula mbakala*, and their effect is *mawalala*. *Mawalala*, as the table shows, stands outside the progression, and is in a way the end or final effect of the whole process. In its turn

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mawalala becomes a cause; it stands to *mvici* and *bunji* in the same relation as *wawawaw* to the two groups which follow it. Being regarded by the natives as a season of rest, no product is associated with *mawalala.*

THE CATEGORIES.

We may now return to the categories, as the six divisions may be termed into which the Bavili ideas relating to the various divisions enumerated above may be said to fall. I cannot here set forth the considerations which have led me to select these European ideas as representative of the native modes of thought. I must here content myself with showing how the categories are applied to the two divisions we have selected, the seasons and the groves. It must however be understood that the European ideas which I have been led to select only represent imperfectly the native ideas. On the one hand the European conceptions go beyond those of the natives in many directions; on the other the natives associate many, to the European, heterogeneous notions under one heading.

The six categories are :—Water, earth, fire, motion, fruitfulness, life. I will now proceed to show the connection of the seasons with these ideas.

Mvici. Not only do the names of the months composing this season mean salt water and fresh water, but the word *mvici* itself contains the root *mu* (for *mbu* = the sea. The connection of this group with liquids is clear.

Bunji. The names of the component months mean the earthly source of *xicifu,* and the name of the group the source of seed or maize. This connects it with the category of earth.

Mvumvumvu. This is the period of marriage, and the names of the months mean male and female desire. The flame of love is perhaps sufficient to justify me in associating this group with fire.

Wawawaw. The notion of running away, to which we have already alluded, may serve to connect this season with the category of motion.

Nvula nvantu. These months are the months of maturity of crops and the harvest, and their names are connected with the mortar in which seed is pounded. The connection with fruitfulness seems clear.

Nvula mbakala. We have already mentioned that the opening of *mawalala* is a period of high birth rate. This may serve to associate this season with the category of life. The names of the months mean male and female suffering.

THE SACRED GROVES.

The *bakicibaci* (sing. *nkicici*) are powers who reside in the sacred groves and give their names to them. The grove is termed generically *xibila.* The land on which Maloango has to build his official residence is also called *xibila* and it is here that he as *nkicici* may be said to join mankind to *nzambi* through the *bakicibaci.*

There are apparently two great classes of sacred groves :—(1) those connected with the sea, sea-fish and spiritual ideas; and (2) those connected with the rains, plantations, birth and natural ideas. Each *xibila* of one class has a *xibila* in the other class corresponding to it, and each contains a spring or water of some kind as the home of its *xama* or snake. Each *xibila* has also its sacred herbs, seeds, and tree. It contains in the centre of the circular grove a small native *shimbcc*, where the *nganga* or priest keeps his basket of seeds and shells, such as *mbiala mioko*, a fruit from the interior, *masevi*, or crusader's shell, *zekele*, a shell, *ntumpu*, a fruit, and *nankamakana*, a fruit that grows underground in the Mayombe district. Heaps of oysters and cockle shells are also found in the groves.

They also contain the skin of a snake, the *mboma*, the skin of the snake *xama*, the vertebræ of a whale, the feathers of a fowl, the head and horns of animals such as the *lungu* antelope, *mpakasa*, the ox, and *ngulungu*, the smaller antelope, etc.; the heads of beasts are placed there too, and the *nganga*, or priest, resides there.

We have seen that the Bavili philosophy teaches that a sort of genetic connection exists between the seasons. This idea is fairly intelligible in its application to periods of time, which involve a process and therefore a sequence of cause and effect. Though it may appear to us metaphorical to speak of months as male and female, we need only recall the names of some of the chemical elements to see that our own forefathers were prone to deal in ideas of this order, and we can hardly feel surprise that the African intellect follows in their wake.

The idea is less comprehensible when we try to apply it to the groves, less comprehensible, that is, to the European, but it is with the groves possibly that the whole system took its rise. Just as in the seasons we have one group as a primary cause, then two intermediate causes, and then the effect, so with the groves. It must not, however, be forgotten that when we speak of the groves we are really dealing with the powers which the native puts behind them. We have enough examples of cosmogonies embodied in a mythology to make the Bavili idea, if not comprehensible, at any rate no more remarkable than many another savage fancy.

Just as the seasons, months, and products fall into groups of four which are genetically related to one another, so the first grove is the primary cause, the second and third the operative male and female causes, and the fourth is the product. In this connection it is worthy of note that the order of the groves within the groups and of the groups themselves is not one which I have evolved out of my inner consciousness; it was given by the natives themselves. If therefore we find it possible to trace even imperfectly the same formula in its application to the groves which we have just applied to the seasons, I shall, I conceive, have gone far to establish the genuine native character of the ideas which I am putting before you here.

The groves fall into six groups of four each, and just as *mawalala* stands outside the formula of the seasons, so the Lungululubu group stands apart from the rest of the groves. *Lungululubu* is a grove situated on the beach between Indian Point and the place now known as Loango, or the market town Kenga on Mr. Ravenstein's map. Swami Makenka and Ngongolo are the present *zinganga* attached to it. When fishermen have had a spell of bad luck and fish are scarce they apply to these *zinganga*, who say they know how to cause an abundance of fish to fall into their nets. As a person Lungululubu is looked on as the special protector of the Bavili; when he sees *Xikamaci* (the north wind) coming along in her canoe he is said to go out to meet her. This meeting causes a very rough sea (*kalema*), which puts an end to all fishing for a time. The literal meaning of the word Lungululubu is the very source of maternity.

The three other groves which go to make up the group are *xivuma, mbanda lunga*, and *mpumba*.

I. The *mpungu* group is especially associated with the category of liquids.

(*a*) *Mpungu*, in the compound *Nzambi mpungu*, associates *Nzambi*, the creator of the Bavili, with the sky, and therefore by a natural transition with rain.

(*b*) *Senza* is the south wind. As the sea is to the west of Loango, and this wind sets up a heavy swell from the south and south-west, the Bavili have reason to connect this grove with liquids. The literal meaning of *senza* is the river of fatherhood.

(*c*) *Ngonzola* is the south-west wind. In connection with *xama* it is looked upon as the evil rainbow, and said to enter rivers and cause floods, carrying everything before it to the sea.

(*d*) *Mvula* means rain. This confirms the view that brings the first grove of this group, *mpungu*, into connection with rain. In any case the connection of the grove with liquids is clear.

II. The *xibwinji* group is associated with the earth.

(*a*) *Xibwinji* means literally the source of firmness and seed, an idea which seems clearly to refer to the earth.

(*b*) *Xikamaci* means the earth divided from water. The ordinary meaning of *xikamaci* is the north wind. When any one wishes for her help in overcoming his enemies, he goes to her sacred grove and with the help of the *nganga* buries a nail, bead, or other article in the earth at the moment he demands the favour. When for some reason or other he or one of his descendants wishes to withdraw the curse with which *xikamaci* has blighted his enemy's happiness, he must again seek out the *nganga* and present him with an offering. The *nganga* then prepares some medicine which he wraps up in leaves and places in a dish of palm wine and then sprinkles the earth therewith. The petitioner informs the *nganga* what particular object he had buried, and then, so the natives say, the earth bubbles up and throws out the article mentioned. This act of bubbling up, common to the earth in *Xikamaci's* grove and to the whirlpool in rivers, is called *xizuka*.

(*c*) *Samona*, or *samuna*, means literally to keep on making. Here the petitioner when he asks his favour, either whips the earth with a stick, or throws a stone or some other article on it with great force.

As *Xikamaci's* opposite this is supposed to represent the gathering-in action or *xiseku.*

(*d*) *Kunzi* (literally the nerve of self) means the earth, the solid particle or the north-west wind. Here again the connection of this group with the category of earth seems indisputable.

III. The grove of *bukulu* is associated with fire.

(*a*) *Bukulu* means a ray of light, and

(*b*) *Kanga* means to fry, and both are connected with fire. The other two groves, *bunzi*, the west wind, and *mbamba*, the palm kernel, I have not been able to bring into relation with the category.

IV. The *mbawmbo* group is associated with motion.

(*a*) The word *mbawmbo* seems to be connected with *bawmboka*, to move slowly.

(*b*) *Luabi*, and

(*c*) *Solokoto.* I have not been able to connect with the central idea.

(*d*) *Mabili*, the east wind, brings the great tornadoes, and is therefore obviously connected with the idea of motion.

V. The group of *kungu* is connected with the notion of fruitfulness.

(*a*) *Kungu* is derived from *kunga*, to amass. The dead who die with their eyes open are, I may remark in passing, said to be placed here.

(*b*) *Xivola* too seems to be connected with the idea of amassing.

(*c*) *Ntawbo* means a seedling or sprout.

(*d*) *Mbumba* alone does not seem to be related to the category.

VI. The group of *nyambi* is associated with life.

(*a*) *Nyambi*, a name also applied to *nzambi*, seems to mean rather *vis vitæ.*

(*b*) *Luabi* means the umbilical cord.

(*c*) *Nyimina* is a word derived from *yimina*, to know how to bear fruit.

(*d*) *Mpukunyambi* is the bursting or birth-giving power in *nyambi.*

Not only are all the groves connected in this way with ideas of life, but it is to them that a man takes his pregnant wife to ask for a safe delivery. Here too the people appeal to the *nganga* in times of famine.

Thus in the twenty-four groves of which the order has been given me by the Bavili, no less than nineteen can without undue forcing, as it seems to me, be brought into connection with the categories which we have already applied with success to the seasons. This parallelism seems to me to be too striking for it to be possible to explain it as the result of coincidence. When I add that I have also applied the formula with more or less success to the groups of lands and rivers, to the sacred trees, to the sacred animals, and to the omens, I think you will agree that a good *prima facie* case is made out for attributing to the Bavili something better than the fetishism which is commonly regarded as the expression of their highest thought.

AUSTRALIAN CANOES AND RAFTS.

By N. W. Thomas, M.A.

[With Plates X–XII.]

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Along a large part of the south and west coasts the natives of Australia seem to have possessed no means of conveyance by water. From the mouth of the Murray westwards, canoes were unknown, and Kangaroo Island and the smaller archipelagoes seem to have been untrodden by the foot of man before European days. On the west coast the raft is recorded at the mouth of the Gascoyne River and on Babbage Island, just off the mouth; in the former case it is highly probable that it was an up-river and not a coast product; in the latter case only a fragment of uncertain origin but similar type was found. It is recorded that in the western and southern area not only the art of navigation but even that of swimming was unknown to the natives.[1]

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[1] **53**, 432; **44**, ii, 10, 169; **28**, ii, 137; **55**, i, 33; **39**, 142, 204.
The numbers in Clarendon refer to the Bibliography on p. 77.

Australian canoes fall into two main types, the bark canoe and the dug-out, each of which, like the raft, has two or more genera and several species. To these two types correspond four main areas, two of bark canoes, including Victoria, New South Wales, Queensland up to about 17° 8′, together with the Gulf of Carpentaria, the Adelaide River and the Coburg Peninsula; the dug-out canoe is found in the Cape York peninsula,[1] at Port Essington and possibly the Gascoyne River (?), the north coast, and in two isolated areas in South Queensland and New South Wales: while the catamaran, or its simplest form, the log, is the means of conveyance by water from Paterson Bay westwards as far as Roebourne, and sporadically in the south-west of the Gulf of Carpentaria and on the Lower Murray. Along the west coast, and on the south coast as far east as Adelaide, there seem to have been no means of transportation by water, and, according to some authorities, the art of swimming was unknown.

A. *Bark canoes.*—The bark canoes fall into two classes, those made of a single sheet of bark and those which are built up of two or more pieces. The single-sheet type is found in Victoria (Fig. 1; Pl. X, Fig. 1),[2] the Riverina,[3] and the south of New South Wales (Pl. XI, Fig. 4);[4] King saw one in lat. 18° 50′, and at Gould Island (18° 10′)[5], not far from the southern boundary of the dug-out. Curr[6] records this type at Halifax, Kennedy[7] at Guyanda Creek, and King and others at Port Essington,[8] and on the Alligator River.[9] At Munro, Victoria, a transition form has been found, the stem of large canoes being formed by a semicircular piece.[10]

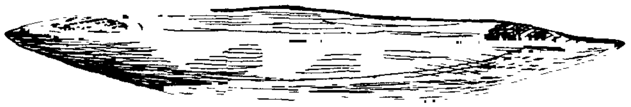

FIG. 1. *Victoria.*

The second type of bark canoe is built up of two or more pieces; this form is found at Breaksea Spit (24° 28′ S.), Murray Island (20° 48′ S.) and Rockingham Bay (?) on the East Coast.[11] On the islands of the Gulf, inside the barrier reef and at Saltwater Bay (23° S.)[12] the main part of the boat consists of three pieces, two for the sides and one for the bottom. A variant of this is found at Blue Mud Bay (136° E.) in the Gulf,[13] where two pieces only are used, with the seam on one side. In Pellew's Islands, (137° E.)[14] in the Gulf, a built-up canoe is also found, but in this case it is clinker built, formed of many pieces sewn together. The Anula canoe is formed of three main pieces with two small ones at the stern and two at the stem.[15] At Frazer's Island (25° S.) we find a canoe made of bark "tied together with ropes,"[1] but it is not clear what this means. At Port Denison (20° S.) (Pl. XII, Fig. 2) on the Batavia (13° 30′ S.) and Adelaide Rivers (131° 30′ E.) and at Coburg Peninsula (133° E.)[2] the sewn bark type is found but none of the authorities give definite information by which we can decide the exact type. The paddle canoes of the Goulburn Islands (133° 30′ E.) are probably of bark.[3]

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[1] Dr. Howitt says it has now spread as far south as Hinchinbrook Island (18° 30′), but it was found further south by Macgillivray in the forties and has therefore not gained ground in the last sixty years. [2] **57**, vi, 22; **16**, 139; **45**, ii, 201; **18**, 43. [3] **35**, 336; **34**, i, 220; **4**, 64. [4] **46**, 81; **47**, 193; **37**, 135; **53**, 363, 432; **49**, 92; **16**, 107; **20**, ii, 153; **19**, 150; **28**, i, 175. [5] **28**, i, 198, 200; cf. **32**, i, 87. [6] **8**, iii, 427. [7] **25**, 194. [8] **28**, i, 90; cf. **32**, i, 146; **8**, i, 269; **44**, i, 412 (possibly sewn bark); **27**, ii, 183. [9] Model in Pitt Rivers Mus., Oxford. [10] **41**, i, 411. [11] **52**, xxii, 156; **10**, p. 14; Jukes in **53**, 331; but cf. **24**, i, 93, and **6**, p. 16, where the sewing is not mentioned; and see **12**, iii, 95. [12] **54**, xiii, 288; *ib.*; **31**, 316. [13] **14**, ii, 198. [14] *Ib.* 171. [15] **42**, p. 679.

Bligh records finding a canoe 33 feet (10 m.) long at Sunday Island (11° 45′ E.)[4] made of three pieces, the bottom entire, to which "the sides were sewn in the common way," but there is nothing to show that this was a bark canoe, though, if it were Australian, it is difficult to suppose that it was not. The extraordinary feature, however, of a carved projecting bow, with a rude fish figure-head, seems to exclude bark as the material.

Turnbull[5] speaks of the canoes of New South Wales as "composed of the bark of trees tied together in small splinters"; but this assertion is unsupported. McMinns,[6] however, reports from the Adelaide River a canoe of Melaleuca bark, formed of several layers to a thickness of 9 inches (22·8 cm.). One end was pointed and fastened by wild vine lashing; the other was about 4 feet (1·21 m.) broad. The whole was more like a raft than a canoe. It was 16 feet (4·9 m.) long and large enough for ten persons.

Equally unsupported is Tasman's statement that at Carnot Bay (17° 12′ S.: 121° E.) "these proas are made of the bark of trees."[7] He probably mistook the raft of unbarked timber for a bark canoe.

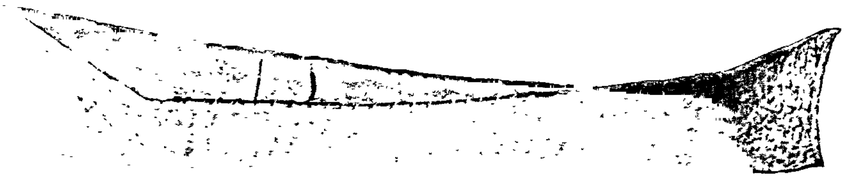

FIG. 2.

The canoes of the single sheet type are divisible into four species distinguished by the four ways in which they are finished off: these are (*a*) by tying the ends; (*b*) by lacing or sewing them; (*c*) by skewering them sometimes with a lashing to make sure; (*d*) and by blocking the ends with clay.

An indeterminate type is described from this bend of the Murray and stated to be "very different from the coast canoes." It was round at both ends, 14 feet by 2½ feet (4·3 m. by 76 cm.) in length and beam, and the gunwale was 1 inch (2·5 cm.) high at the stem, 6 inches or 15 cm. at the bow.[8]

(*a*) This is found in New South Wales (Pl. XI, Fig. 4), at Port Jackson, King's River, Pumicestone River, and in latitude 34° 6′,[9] in Victoria near Grant and Munro.[10]

(*b*) is found at Port Essington, on the Alligator River (Fig. 2) in latitude 18° 50′ 15″, at Halifax Bay (18° 30′), on the Johnstone River (17° 30′)[11] in New South Wales (locality not stated).[12]

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[1] **55**, xv, 314.

[2] **8**, iii, 4; **44**, i, 312; **59**, v, 308; **56**, 1881, 229; **8**, i, 273; **11**, xxiii, ii, 350.

[3] **53**, 396.

[4] **5**, 210.

[5] **49**, 92.

[6] **51**, xliii, 175.

[7] **44**, i, 89.

[8] **22**, p. 232.

[9] **28**, i, 175; **7**, ii, 255; **37**, 135.

[10] **41**, i, 411.

[11] For refs. see above.

[12] **53**, 363.

(*c*) is found in New South Wales (locality not stated),[1] and
(*d*) along the south coast, at Western Port, on the Murray (140°–141°), in the Wellington district,[2] and on the Yas[3] (Fig. 1).

Trees used.—According to Howitt,[4] the best trees are :—

(1) Mountain ash[5] (= iron bark), which is tied, but not turned inside out.
(2) Stringy bark (Dibil palm) (see below for method of use).
(3) Red gum (= *E. rostrata*) which is also tied, but not turned.
(4) Blue gum (*ballook*) which is tied and turned.
(5) White gum of river valleys.
Snowy River mahogany.
(6) Peppermint ("no good"); thin yellow-barked stringy bark (*yert chuck*); the good kind is *yam goura.*

Other authorities merely say that gum tree bark is used without specifying the species.

Preparation of bark.—Howitt gives the following description of the method of preparing a canoe on the Snowy River.[6] A stringy bark tree was chosen with straight bole, free from branches and knots and about 4 feet (1·2 m.) in diameter at the butt. It was ascertained by taking a chip of bark out with the tomahawk that it would strip freely. Two straight saplings,[7] about 10 feet in length, were cut, trimmed of their branches, and one end of each flattened, so as to be pliable. The bark was then cut round 2 or 3 feet (60–90 cm.) from the ground, and then in a straight line 10 feet upwards, the ascent being made by means of notches[8] in the cut itself; then an upper cut was made.

The black then descended, worked the bark partly free with the axe blade and inserted the blade of one sapling; running this upwards he separated the bark for some distance, and left the pole to spread open the bark; he then went on to do the same with the other sapling till only the upper rim of the sheet remained fast. Taking hold of the sheet two men now lowered it to the ground, laying it smooth side downwards, so that the old outer bark could be cleaned off, and only the brown under bark and fibrous inner layer remained; the brown inner bark was further removed to a distance of 2 feet (60 cm.) from each end.

A fire was then made and the bark well steamed over the flame. As soon as it was pliable it was turned inside out; the sides were then doubled up, secured with ties passed through three holes in each edge, the cords being made of twisted strands of the fibrous inner bark.

One end was next reheated, and folded together fan-wise; the folds were squeezed together and bitten to make them hold; and a lashing 1 foot (30 cm.) in length put on. The other end having been similarly treated, struts were put in to hold the sides apart. These were pointed sticks the exact width of the canoe, the points being inserted in the same holes as the ties. Finally pliable branches were forced under the ties to serve as ribs and the canoe was ready.[1] Its total length was about 10 feet (3 m.).

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[1] *Ib.*

[2] For refs. see above.

[3] **3**, i, 169.

[4] **41**, i, 411.

[5] **8**, iii, 4.

[6] **41**, i, 408.

[7] This was replaced by the *katta* (digging stick) when the camp was at hand ; **57**, v, 170.

[8] A notched sapling served as a ladder in New South Wales ; **47**, p. 98.

On the Darling and in the Riverina the red gum was used, and a sheet taken off by preference at a bend.[2] Possibly this kind was for temporary use only.[3]

Near Munro, Victoria,[4] an elliptical sheet was preferred, which was laid on the fire till it doubled up in the shape of a cigar-shaped canoe.

Among the Bangerang[5] a river gum was selected, some 20 feet (6 m.) in circumference. Notches outside the line or a stout branch served as a means of ascent. The bark was hammered, if the sap was not up, with the butt of an axe to take it off, and a rope was slipped round the sheet to prevent it from falling heavily. It was then turned upside down on a fire, two or three ribs were inserted and a log placed under the bow to mould it. In a day or two it was set and ready for use.

The Wathi-Wathi (?) used red-gum bark, with struts at 3-foot intervals. Props were placed under the bow and stern and, if necessary, heavy billets of wood inside to shape it. Well puddled clay was smeared over the inside, and in ten days or so it was ready for use and would last a couple of years.[6]

There is but little information as to the method of constructing sewn bark canoes, save what we learn from Spencer and Gillen.[7]

" Amongst the central tribes boats are, very naturally, quite unknown, for the simple reason that it is only very rarely indeed that there is sufficient water in the creeks to render a boat of any service. At the same time it is curious to note the striking resemblance in form between some of the *pitchis* and boats.

"The true indigenous Australian boat has the form represented in Pl. X, Figs. 2–5. This particular one measures 17 feet (4·5 m.) in length, slightly more than 4 feet (60 cm.) in beam, and has both ends raised, the bow being higher than the stern. There is no attempt to form a keel. The bark is derived from some species of gum-tree which easily peels off in long broad strips. The outer rough portion is scraped off, and it is then ready for use. In the case of the one drawn there are seven pieces of bark. Two narrow strips form the upper part of the bow on each side, and two smaller pieces the upper part of the stern. These are sewn on to the three remaining pieces which form the main part of the boat. One of them extends along the whole length of its side from bow to stern, and, save for a short distance at either end, from bulwark to where the keel ought to be. The two others form the opposite side of the boat—the near one in the drawing. These three strips are firmly sewn together along the bow, stern, and keel, and up one side. Along the bulwarks, but not extending quite to either end, runs a thin long branch of mangrove wood securely tied on to the bark. For the purpose of preventing the sides from collapsing outwards there are nine "ties" of rope passing across from side to side, arranged as in the figure. This rope is made out of the inner fibrous part of the bark of various trees, or out of the leaves of the screw pine torn into shreds. As a general rule it consists, like the greater part of the native twine, of two plies only, but every now and again it has three. Two of these ties serve, as it were, to pinch in the extreme of the bow and stern. To prevent the sides from collapsing inwards three stout sticks are arranged at the level of each "tie" rope, as shown in the section, one passing across immediately under the tie rope from side to side, the other two slanting across from immediately under the horizontal piece to rather more than half-way down on the opposite side of the boat. Extra pieces of bark are laid along the bottom of the boat, partly to afford additional strength where the crosspieces press against the side, and partly to afford a dry floor under which the small amount of bilge water which percolates through the keel line can collect.

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[1] It does not seem to have been an invariable practice to turn the stringy bark, **41**, i, 411 ; **20**, ii, 153, etc.
[2] **41**, i, 410.
[3] *Ib.* 407.
[4] *Ib.* 411.
[5] **9**, 89.
[6] **4**, 64.
[7] **42**, p. 679.

"The particular one here figured belonged to, and had been made by, men of the Anula tribe, and when we secured it, had just been brought across from the Pellew Islands and up to the MacArthur River for fifty miles. Though sheltered to a certain extent by the islands, there is yet a considerable stretch of the open sea between the latter and the mainland, but in a boat of this size six or eight natives will cross, some of them paddling, while others are baling out any water which may leak in or splash over."

With their account may be compared the description of a similar type from the Gulf.[1] "These sheets of bark, cleaned of the outer, rough covering, are pointed at each end and bored with holes along the edges for sewing together. One sheet forms the bottom, the others the sides and ends. A piece of filling or roll of grass is sewn between the edges to strengthen and fill up the seams. The inner bark forms the outside of the canoe. Rims of tough bands are round the gunwale . . . . a cord across the centre keeps it from spreading and a piece of wood at each end keeps the sides apart."

On the Alligator River (132° 30′ E.) a curious form is found (Fig. 2) with sewn ends and strengthening pole along the gunwale. The gunwale has a strong overhang at bow and stern, the forepost and sternpost are curved.

Ribs.—The descriptions are as a rule vague, and it is not always easy to make out the exact meaning of the terms. The ribs mentioned above are variously denominated. At Western Port, Grant[2] says he found a canoe "framed with timber." As the ends were open it is not easy to see the purpose of this, but possibly, as the canoe was broken, the lashings had disappeared. Among the Anula both ribs and struts are used.[3] Sir D. Cooper[4] speaks of a "stretcher," but perhaps not in the same sense, for if King's account[5] of the Port Essington canoes is correct, this term seems to have been more correct than rib, for "in the bottom of the canoe short pieces were placed crossways" in order to increase its strength, an arrangement which differs considerably from the ribs described. "Stretchers" are mentioned as being used at Lake Tyers, but they were probably struts.

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[1] **54**, xiii, 288. [2] **16**, 139. [3] **42**, 682. [4] **53**, 363. [5] **28**, i, 90.

Struts.—More frequently crosspieces were inserted, as we have seen above, to keep the sides apart. Parkinson[1] saw them in lat. 34° 6′. They were also used in the Wellington District,[2] at Saltwater Bay,[3] at M. Island,[4] at Rockingham Bay,[5] on the Johnstone River,[6] among the Anula,[7] and in the Gulf.[8] Daniel Cooper,[9] Henderson,[10] and Freycinet[11] also mention them as being used in New South Wales without specifying the locality.

Ties.—These are apparently less frequent. Freycinet figures a New South Wales canoe with them, but no other mention seems to be made of them in connection with single sheet canoes. Flinders speaks of the Blue Mud Bay canoes being spanned in five places with creeping vine to preserve the shape and strengthen the canoe; this apparently refers to ties. Among the Anula nine ties of bark or screw pine leaves are used.[12]

Lacing.—At Lake Tyers the ends were laced with vegetable fibre.[13] For sewing or binding the ends of the body of the canoe together we find in use at Lake Tyers[14] vegetable fibre, at Port Jackson[15] vines, and in New South Wales[16] (locality not stated) stringy bark; in lat. 25° bark rope was used,[17] at Saltwater Bay[18] wood fibre, at M. Island[19] a cane-like creeper, in lat. 18° 50′ *flagellaria indica*[20] and at Rockingham Bay *calamus Australis.*[21]

The *flagellaria* was used at Port Essington for a similar purpose.[22] In New South Wales sinew is said to have been used.[23]

Pins.—The only notice of accessory parts in a bark canoe we owe to Grant,[36] who mentions that there were two or three wooden pins in the bows of the New South Wales canoes, probably to carry fish, pigs or spears.

Gunwale.—In some districts a strengthening pole was lashed along the gunwale; Sir D. Cooper mentions a rush lacing in New South Wales,[24] Carron found the pole at Rockingham Bay,[25] Spencer and Gillen among the Anula,[26] Flinders at Blue Mud Bay,[27] King at Port Essington,[28] and Edge-Partington on the Alligator River.[29]

Caulking.—In New South Wales,[30] and parts of Victoria,[31] mud was used for stopping the cracks. At Lake Tyers,[32] Port Denison,[33] and Blue Mud Bay[34] the caulking was done with gum. Grass was used for the seams in the Gulf.[35]

Painter and Mooring Pole.—King mentions the use of a painter for bark canoes at Port Essington[37]; in New South Wales during fishing operations the canoe was fixed to the river bank by a long stick, round which the women (whose

[1] **37**, 135.
[2] **19**, 150.
[3] **31**, 316.
[4] **10**, 14.
[5] **53**, 331.
[6] **12**, iii, 95.
[7] **42**, 682.
[8] **54**, xiii, 288.
[9] **53**, 363.
[10] **20**, ii, 153.
[11] **15**, ii, 782.
[12] *Loc. cit.*, **14**, ii, 171 ; **42**, 682.
[13] **41**, i, 408.
[14] **41**, i, 408.
[15] **46**, 81 ; **47**, 193.
[16] **53**, 363.
[17] **55**, xv, 314.
[18] **31**, 316.
[19] **10**, 14.
[20] **28**, i, 198.
[21] **28**, i, 90.
[22] **32**, ii, 126.
[23] **40**, 224.
[24] **53**, 363.
[25] **6**, 16.
[26] **42**, 682.
[27] **14**, ii, 198.
[28] **28**, i, 90.
[29] MS. note.
[30] **20**, ii, 153.
[31] **41**, i, 410, 411.
[32] *Ib.* 408.
[33] **8**, iii, 4.
[34] **10**, ii, 198.
[35] **54**, xiii, 288.
[36] **16**, 107.
[37] **28**, i, 89.

province it was to fish with hook and line) passed one arm to steady the canoe. A painter and mooring pole were used at the head of the Murray.[1]

Hearth.—It was the custom to keep a fire in the canoe, and to boil, or half-warm the fish as soon as they were caught. The fire was in the centre of the canoe on a hearth of earth, ashes, mud, clay, stone, seaweed or sand. Collins mentions that many of the women showed signs about the small of the back of having sat too close to the fire.[2]

Bailer.—The canoes naturally ship a good deal of water, and are in addition possibly leaky. We find, therefore, that various appliances are used for bailing. At Lake Tyers the scoop-shaped pieces of bark (*wrail*) which served as paddles did duty as bailers also[3]; and King[4] found that the pieces of bark, 5 or 6 inches long, in use at Goold Island (18° 10′) also served a double purpose. At Jervis Bay (35° 5′) Grant[5] records the use of a small calabash, with which they threw out the water shipped by means of a backward motion of the other hand and without turning their heads, when they paddled with their hands. At Saltwater Bay (23°) and M. Island (20° 48′) and in the Gulf shells were in use for the same purpose.[6]

Dimensions and Capacity.—The dimensions of the single sheet type are naturally determined by the possibility of detaching and moulding bark of sufficient size, and their usual length does not seem to exceed 12 or 14 feet, though 18 and 20 feet canoes are recorded, and they may be as small as 5 feet in length. The following table shows the variations[7] :—

District.	Dimensions.	Capacity.
Victoria	7′ 6″ (2·3 m.)	2 men.
„	8′ (2·4 m.)	3 „
„	10′—12′ (3 m.—3·7 m.)	4 „
Bangerang	18′ × 2½′ × 8″ (5·5 m. × 76 cm. × 20 cm.)	5 „
The Moira	20′ (6 m.)	5—6 men.
Gippsland	— —	6—10 men.
New South Wales	12′ (3·6 m.)	bullock plough.
New South Wales, Murray	large	boxes, etc.
New South Wales, Murray	15′ × 3′ × 8″ (4·5 m. × 90 cm. × 20 cm.)	7—8 men.
New South Wales, Murray	14′ (3·6 m.)	4 „
New South Wales, Murray	?	2 „ (5 as ferry).
New South Wales, Murray	?	3 „

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[1] **22**, 232.

[2] **47**, 193 ; **38**, ii, 293 ; **18**, 43 ; **48**, 98 ; **53**, 363 ; **7**, i, 557.

[3] **41**, i, 408.

[4] **28**, i, 200 ; cf. **32**, i, 87

[5] **16**, 107.

[6] **31**, 316 ; **10**, 14 ; **54**, xiii, 288.

[7] **41**, i, 411.

District.	Dimensions.	Capacity.
New South Wales, Lake Macquarie	— —	9 men.
New South Wales, Wellington Dist.	6′ × 2½′ (1·8 m. × 76 cm.)	2 „
Port Denison ...	9′ (2·76 m.)	—
Queensland, Saltwater Bay (18° 50′) ...	8′ (2·4 m.)	2 „
Queensland (18° 10′)	5′ (1·5 m.)	2 „
Queensland (17° 58′)	5′ × 1½′ (1·5 m. × 45 cm.)	1 or 2 men.
Queensland, Endeavour River ...	— —	1 or 2 „

The sewn bark type is, as a rule, larger, but here, too, considerable variation is found:—

District.	Dimensions.	Capacity.
M. Island (20° 48′)...	8′ × 3½′ × 20″ (2·4 m. × 1·06 m. × 50 cm.)...	—
16° S. : 136° E. ...	? × 2′ (60 cm.)	—
— —	? ?	4—5 men.
13° 15′ S. : 136° E....	13½′ × 2½′ (4·12 m. × 76 cm.)	6 men.
Anula Tribe ...	17′ × 2′ (5·2 m. × 60 cm.)	6—8 men.
Port Essington ...	20′ (6 m.)	—
„ „ ...	18′ × 2′ (5·5 m. × 60 cm.)	8 men.
Adelaide River ...	15′ × 2′ (4·5 m. × 60 cm.)	—

Propulsion.—In shallow water the canoes were sometimes poled. Eyre and Sturt record this method on the Murray,[1] King at Goold Island and King's River[2] (31° 30′), and Brough Smyth in Victoria.[3] We have already seen that the hand was used at Jervis Bay. As an alternative they made use of an oval piece of bark.[4] More often two scoops (*wrail*) or pieces of bark were used, one in each hand.[5] Other authors mention the use of two paddles without saying of what materials they were made.[6] Single paddles of wood were used at Bateman's Bay, New South Wales, and Dawson figures a piece of wood used (on alternate sides) as a paddle at Port Stephens, which is in shape like a wommerah, but too short to be used for such a purpose.[7] Elsewhere in New South Wales the wommerah was actually put to this use, and the description of a paddle, used on the Lower Murray, "which has hooked grains at one end made of kangaroo leg-bones," suggests a similar combination of functions.[8]

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[1] **13**, ii, 313 ; **45**, ii, 201.

[2] **28**, i, 200, 170.

[3] **41**, i, 408.

[4] **16**, 107.

[5] **41**, i, 408 ; **28**, i, 200 ; **6**, 16 ; **15**, i, xxiii.

[6] **37**, 135 ; **53**, 363.

[7] **47**, 98 ; **60**, 79.

[8] **57**, vi, 22 ; but from **4**, 63, it seems to be a spear, used for poling in shallow water, cf. **1**, i, 54.

On the Murray[1] Beveridge and Eyre found the spear, dipped each side alternately, in use as a paddle, by which is perhaps meant the fishgig, 10 to 16 feet (4·9 m.) long. Mitchell found fish-spear paddles in lat. 145° 50′ on the Darling, and Sturt mentions that the 10-foot spears found on the Murray between lat. 140° and 141° were also used both as poles and paddles.[1] Collins records the spear-paddle at Glasshouse Bay.[2] As a substitute for the spear a long pole is used in Victoria, at Saltwater Bay and in New South Wales.[3] The Anula have a paddle apparently 4 to 5 feet (1·2 to 1·5 m.) long with an oval blade two-fifths of the length; and at M. Island paddles were found ornamented with red paint. At Rockingham Bay Jukes saw long wooden paddles with diamond-shaped blades like those of Torres Straits.

Position.—In Victoria the sitting position was adopted for deep water (though Howitt states that the canoe-man stands in rough weather); at Bateman's Bay in New South Wales the attitude was a curious one; the canoe-man sat on his haunches, his right leg under him, and his left knee drawn up to his shoulder: the right hand held the wommera-paddle, the left a wooden paddle, and the fish spear was in front of him. The standing position is mentioned by Mitchell (Darling) and by Beveridge and Eyre[4] (Murray). Henderson mentions both standing and kneeling positions.[5] Dawson[6] says that at Port Stephen they kneel on a bark cushion. Sir D. Cooper[7] says that the paddler was in the stern and the fisherman in the bow. But the most lengthy account is that of Tench[8]; he says that the canoe at Port Jackson was assigned to the women. When one of them paddled to the fishing ground, she placed her child on her shoulders; it entwined its legs round her neck and hung on by her hair. She then dropped on her knees in the middle of the canoe, sitting on her heels and jamming the knees against the side for steadiness. The cross-legged position seems to have been known on the Murray.[3]

Safety.—At Port Essington Keppel[9] reports that the canoes were easily upset. But Mitchell[10] regards the single sheet canoes as very safe, and Eyre[11] says that they were so steady that a man could climb in. In rough weather they seem to have been beached broadside on, if a confused passage in Brough Smyth[12] can be relied on. In the Gulf they were safe in a moderate sea and the blacks could climb in and out of the water.[13] Thompson[14] records that the Bateman's Bay blacks go as far as Tollgate Island, and Brough Smyth[15] mentions that four men went in the large canoes between French Island and the mainland. Tench[16] also states that the Port Jackson natives navigated the open sea, to a distance of several miles, but Peron[17] says they did not leave the neighbourhood of the shore.

Speed.—Tench and Grant are the only authors to allude to the speed. They speak of it as considerable.

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[1] **13**, ii, 313; *ib.* Pl. IV, 3; **34**, i, 220; **45**, ii, 201; **7**, ii, 238.

[2] **41**, i, 411; **31**, 316; **20**, ii, 153.

[3] **12**, iii, 95; **42**, 682; **10**, 14; **24**, i, 93; **41**, i, 408; *ib.* 411; **48**, 98.

[4] **4**, 63; **45**, i, 223; **13**, ii, 313.

[5] **20**, ii, 153.

[6] **2**, 79, cf. **15**, ii, 782; **19**, 150.

[7] **53**, 363.

[8] **47**, 193; **13**, ii, 362.

[9] **27**, ii, 183.

[10] **35**, 336.

[11] **13**, ii, 313.

[12] **41**, i, 411.

[13] **54**, xiii, 288.

[14] **47**, 98.

[15] **41**, i, 412.

[16] **46**, 81.

[17] **38**, ii, 293.

Transport of Canoe.—The canoe was in some cases carried on the head.[1]

Number.—Mitchell saw a fleet of twenty-four canoes on Lake Boga (35° 19′); another author says that each male adult owned a canoe; by Governor Phillip as many as fifty were seen drawn up on the shore.[2]

B. DUG-OUT.

Dug-out types.—The dug-out canoes of Australia are divisible into two main classes: (1) the simple type found (*a*) in South Queensland and the north of New South Wales[3]: (*b*) on the Gascoyne River and possibly in the Coburg peninsula[4]; and (*c*) a Malay type west of the Gulf[5]; (2) the type with one or two outriggers, of large size and seagoing capacity, found from Cape York to Palm Island (18° 30′)[6] and at the mouth of the Batavia River.[7]

Trees used.—(*a*) In the Bunya Mountains, according to Leichardt, they made little canoes of "the stringy bark tree which they call the Dibil palm."[8] This may possibly be a bark canoe, as the material is, as we have seen, commonly used from this tree. In the Blue Mountains (34°: 150°) the Curriyong tree (? *Hibiscus heterophyllus*) was used[9] and Angas speaks of boats made out of tree trunks in the north of New South Wales.[10]

(*b*) Gregory[11] records the use of a sort of sycamore for canoes (? raft) on the Gascoyne, and one authority speaks of a small dug-out at Port Essington, which was not derived from the Malays.[12] Edge-Partington[13] figures dug-outs from Adelaide River which seem to show foreign influence, though not necessarily Malay. A dug-out from Wessel Islands is shown in an oil picture at the rooms of the Geographical Society (Pl. XI, Fig. 8).

(*c*) King[14] saw, at Goulburn Island, a teak canoe 17 feet (5·2 m.) long by 2 feet (60 cm.) beam, probably obtained from the Malays. Stokes,[15] Curr,[16] and Spencer and Gillen[17] report that dug-outs are obtained from the Malays. The latter authorities give 20 feet (6 m.) by 3 feet (9 cm.) as the size. The statement (? taken from Gregory) of Knight that canoes are used in North-West Australia is unreliable.

(2) At Cape York a silk cotton tree (*Bombax*) or *Erythrina* is commonly used,[18] and King[19] mentions the latter as the material at Weary Bay and Endeavour River. Jardine[20] also mentions a cotton tree (*Cochlospermum*) as being in use at Cape York.

Construction, floats and booms.—At Cape York a tree was felled and hollowed where it lay and dragged to the beach by means of long climbers used as ropes.[21] Two stout poles 14 to 20 feet long (4·3 to 6 m.) were then laid across the gunwale,

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[1] **15**, i, xxiii; **20**, ii, 153; **7**, ii, 145.

[2] **34**, ii, 137, 142; **57**, vi, 22.

[3] **1**, ii, 231; **3**, i, 115; cf. **30**, 375.

[4] **29**, 106, but probably erroneous; but cf. **17**, 41; **53**, 396.

[5] **28**, i, 67; **44**, i, 394; **12**, iii, 95; **8**, i, 269, 273.

[6] For refs. see above.

[7] **56**, 1881, 229.

[8] **30**, 375

[9] **3**, i, 115.

[10] **1**, ii, 231; **50**, 1858, 56.

[11] **17**, 41, **56**, iii, 22.

[12] Brierley in **53**, 396.

[13] **12**, iii, 95.

[14] **28**, i, 67.

[15] **41**, i, 394.

[16] **8**, i, 273.

[17] **42**, 680; **29**, 106.

[18] **32**, ii, 16.

[19] **28**, i, 220, 225; ii, 14.

[20] **23**, 83.

[21] **32**, ii, 16.

6 to 10 feet (1·8 to 3 m.) apart, and lashed there. The ends of these were lashed and pegged to two long floats of light wood, pointed and slightly turned up at the ends.[1] One authority says one side was raised by a board lashed on with rattan, and that the canoes are bartered from the islanders.

At Cape Direction[2] the log was well hollowed out and the top sides tumbled well home. At both bow and stern was a projecting ledge, seen in the British Museum model from the Cairns district some 250 miles further south. The booms were laid one amidships, the other across the stern, projecting 6 or 8 feet on each side and bending down so as nearly to touch the water. The floats were flat boat-shaped pieces of wood about 8 feet long.

At Weary Bay[3] the greatest breadth in the bilge was 15″ (37 cm.) and the sides tumbled home so that the space between the gunwale was 6″ to 8½″ (15 to 20 cm.). The boom projected 2 feet (60 cm.) on one side only; on the opposite side the ends projected 15″ to 20″ (37 to 50 cm.) and forms a platform.

At Endeavour River the canoe was 22″ (55 cm.) in the bilge and hollowed out by fire or some blunt tool.[4]

In the Cairns district the canoe is nearly vertical inside, and outside retains its natural form, the projections overhang at the bow and stern, as shown in Pl. XII, Fig. 1. One outrigger only is used, as at Weary Bay; but in the present case the booms are double. They pass at the same height through the sides of the canoe and are usually secured vertically one above the other by two pegs to a log float; one of the British Museum models has five pairs, the other four. (Pl. XII, Fig. 1.)

In the north of New South Wales the canoe was hollowed by fire.[5]

Outriggers.—Two outriggers[6] are found at Cape York, Newcastle Bay, Bird Island (11° 50′), and Cape Direction (13°). The single outrigger[7] is found at Cape Flinders (14° 7′), Weary Bay (15° 55′), Cairns (17°) and in lat. 17° 12′. At Palm Islands (18° 50′) the description[8] speaks of outriggers but it may be assumed that only one is meant.

Platform, gear.—At Cape York the centre of the canoe is occupied by a stage of small sticks, 12 feet in length, laid across the gunwale, and extending on each side about 3 feet beyond it; on the outside is a sort of double fence of upright sticks, used for storing away weapons and other gear.[9] At Newcastle Bay, east of Cape York, the stage was between the points where the outriggers cross.[10] At Cape Direction[11] the gear fence seems to have been unknown and spare paddles, booms, spears, shells, twine and fishing gear was stored in the boat, everything being fastened by a bit of line.

Anchor.—In the bow of the Cape Direction canoe was a coil of rope, which possibly served as an anchor cable[1]; at Cape York it was often made of *flagellaria indica* and a large stone served as anchor.

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[1] **23**, 83; **54**, xii, 266.
[2] **24**, i, 106.
[3] **28**, i, 209.
[4] *Ib.*, 220.
[5] **1**, ii, 231.
[6] **32**, ii, 16; **23**, 83; **28**, i, 237; **24**, i, 106.
[7] **28**, i, 231, 209; **53**, 304.
[8] **32**, i, 98.
[9] **32**, ii, 16; **41**, i, 414 n.
[10] **23**, 83.
[11] **24**, i, 106.

Fire.—At Newcastle Bay, fire was invariably carried on the platform, and King saw it on this projecting end of the Weary Bay canoes.[2]

Bailer.—Shells were used as Cape Direction,[3] and melon husks at Cape York.[4]

Dimensions, capacity.

Cape York	15′—20′ (4·6—6 m.)	—
„ „	45′ × 3′ (13·6 m. × 91 cm.)	—
Newcastle Bay ...	28′ × 2½′ (8·5 m. × 76 cm.)	—
„ „ ...	50′ (15·2 m.)	12—15 men.
Bird Island	16′—18′ (4·9—5·5 m.)	—
Cape Direction ...	20′ (6 m.)	—
Cape Flinders and ...	19′ × 22″ (5·7 m. × 55 cm.)	—
Endeavour R. ...	10′ (2·7 m.)	4 men.
Weary Bay	21′ × 15″(6″)(6·3 m. × 37 cm.)	—
? ? (Cook) ...	14′ (4·1 m.)	

Bligh's Sunday Island canoe has already been mentioned. If we may assume that it was a dug-out (and not in three pieces, as he states) its dimensions 33′ × 3′ (10 m. × 9 cm.) agree with those given above.

Propulsion and sails.—At Newcastle Bay a sail of palm leaf matting was used. Macgillivray[5] describes how the latter was set at Cape York: two poles were set up in the bows, and a longer and stouter one laid across the gunwale on the weather side, so that it projects outwards and backwards, serves as a boom. The two poles are supported by stays and guys and by a forked pole. The sails are usually two in number, 4½ feet (1·4 m.) in width by 12 feet (3·7 m.) in height, made of pandanus leaves, and pegged on each side to small poles. When they are set, they are put up on end, side by side, and travel along the backstay by means of a cane grummet. A man generally sits on the boom when it is blowing fresh. Cook[6] mentions that canoes were poled at Endeavour River or propelled by paddles used with two hands.

Speed.—The sails being in the bows, the canoes naturally make a good deal of leeway, but, when they are running free, may attain the respectable speed of seven to eight knots. The paddles used at Cape Direction were diamond-shaped, and long enough to be used by a man standing up.[7] Two paddles and a pole were carried at Weary Bay, and the paddlers sat in the stern. In the Cairns District and at Bird Island the paddles were bat-shaped implements, in the former case ornamented with red point at each end of the handle and blade.

Seaworthiness.—The Kowraregas of Cape York stand boldly out in a strong breeze.[8]

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[1] *Loc. cit.*

[2] **23**, 83; **28**, i, 209.

[3] **24**, i, 106.

[4] **32**, ii, 17.

[5] **23**, 3; **32**, ii, 187.

[6] **36**, 67, 71.

[7] **24**, i, 106; **28**, i, 209, 219; **32**, ii, 119.

[8] **53**, 396.

C. LOG AND RAFT.

(*a*) The simplest possible form of vessel is the log, on which the voyager rides astride (Pl. XI, Fig. 6), but, even before this, comes the float or buoy on which he supports himself by resting on it his arms or chest. On the north-west coast, bundles of rushes were used for this purpose.[1] At Patterson Bay the men swam with a log across their chests.[2]

(*b*) On the Darling (145° 50′) Mitchell saw a man floating down the stream on bark.[3] Near Delambre Island (117° E.) Gregory[4] saw logs of wood shaped like canoes, not hollow but very buoyant, about 7 feet long by 1 foot thick, propelled with the hands only, the legs resting on a little rail of sticks driven in on each side; in this respect it resembles the King's Sound raft depicted by Kent.[5]

At Rosemary Islands[6] (115° E.) the only vehicle is a log, lengthened, if necessary, by pieces fitted on by means of pegs, which cross and bend against each other, so as to form a sort of elastic interlocking connection. The bow is rudely ornamented and attached in the same way but less closely. In using it, the navigator sits astride and paddles with his hands, keeping his feet on the end. (Pl. XI, Fig. 6.)

(*c*) The raft proper is found on the Gulf of Carpentaria,[7] Lake Alexandrina,[8] and the Lower Murray.[9]

Flinders states that at Melville Island (131° E.) they have rafts only, but this, too, seems highly improbable.[10] At Patterson Bay (131° E.) Stokes saw a raft formed of small bundles of wood lashed together (cf. Pl. XI, Fig. 3), on which were two women and several children.[11] At Allen's Island (17° 5′ × 139° 26′ E.)[12] Flinders saw rafts of straight mangrove branches, very much dried, and lashed together in two places with the larger ends one way, so as to form a broad part, and the smaller ends ran to a point, and towards the other end was a bundle of grass on which the navigator sat. King[13] describes and figures a similar construction from Hanover Bay (124° 47′), consisting of five mangrove stems lashed to a frame of smaller wood (Pl. XI, Fig. 7); it was buoyant enough to carry two natives with their spears and baskets. Not unlike this is the raft, described by Kent, from the Kimberley district[14] (123° E.). It is triangular and formed of poles of the Cyprus pine (? *Frenella robusta*) fastened together with wooden pegs and supplemented by a few vertical sticks at the wider end, between which are impaled the fish (Pl. XI, Figs. 1, 2). At Roe's group[15] in the immediate neighbourhood, Stokes saw a raft of nine small poles (Pl. XI, Fig. 5), 10 feet by 4 feet (3 m. × 1·2 m.); it was pegged together, and the greatest diameter of the largest pole was 3 inches. The whole raft could be carried by one man with ease.

At the mouth of the Gascoyne River (25° S. 114° E.) a raft was discovered in a mass of driftwood by Lieut. Austin[16] in 1851. It was a light log, 11 feet (3·3 m.)

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[1] **53**, 346. [2] **44**, ii, 16. [3] **34**, i, 220. [4] **17**, 56. [5] **26**, 8. [6] **28**, i, 38, 43.
[7] **53**, 304; **55**, 1858, 152; **56**, 1881, 229. [8] **1**, i, 90. [9] **43**, 75. [10] **14**, ii, 154.
[11] **44**, ii, 16. [12] **14**, ii, 37. [13] **28**, ii, 69. [14] **26**, 8. [15] **44**, i, 112. [16] **55**, xxvi, 271 n.

long and 10 inches (25 cm.) in diameter. At one end it was curved to an angle of 160°, and pegs were driven in on each side of this end, on which were two layers of small twigs bound up with bark, forming a basket like a dish, about half the length of the raft.

A portion of a similar one, 6 feet (1·8 m.) long, was found by Phillips on Babbage Island at the mouth of the Gascoyne in 1855. There is thus every probability that they had come down the river.

At Bathurst Island (131° E.) the raft was the same as at Roe's group save that small pieces were inserted between each pole so as to make the flooring almost smooth.[1] In the large end six pegs formed a kind of basket in which were means of procuring fire, etc. East of this, near the same island, Stokes saw a three-stemmed mangrove trunk,[2] 18 feet by 4½ feet (5·5 m. × 1·3 m.), in use as a raft; the roots formed a sort of gunwale at the bows, and an elbow in the trunk served the same purpose at the stern; a platform of small poles covered with dry grass formed the floor. On the Glenelg,[3] and sometimes at Roebuck Bay, three or four mangrove sticks 6 or 7 feet long (1·8 m.—2·1 m.), are pegged together with pine.[4] The ends of all the sticks are carefully sharpened, as in King's illustration, and only poles of a suitable curvature seem to be selected. About the middle, a pine pin, projecting 6 or 7 inches on either side, formed a support.

Rafts are recorded from 17° 12′ × 146° by Brierley. On Lake Alexandrina the raft was of reeds and was used for voyages of miles by eight or ten women; on the Lake Murray timber and reeds were used together.[5]

Propulsion.—At Patterson Bay the raft was pushed by swimmers;[6] on the Fitzroy a spear was used.[7] The frontispiece of King's second volume shows the same method; Martin[8] saw this method on the Glenelg, Kent in King's Sound, although his photograph shows a paddle;[9] in the latter district a double-bladed paddle was sometimes used.[10] On Sweers Island (139° 40′ E.) a mangrove paddle is used.[11] On Lake Alexandrina a pole 20 feet (6 m.) long was used.[12]

II. CONCLUSIONS.

If we exclude the raft as a contrivance likely to be discovered by any savage tribe in the neighbourhood of water, provided timber were not altogether absent, we are still confronted with the problems of the indigenous or foreign origin of the two types of bark canoes, and the two types of dug-outs. The question of the extent of the areas at different dates is naturally important, but cannot be dealt with owing to lack of material.

Dr. Howitt[13] holds that the Australians, like the Tasmanians, reached their country by land. This is in itself by no means improbable, but perhaps the argument from canoes is less weighty than it appears at first sight. It is true that a large area in Australia is without means of navigation, and Dr. Howitt lays stress on the fact that no instance has ever been recorded of a people losing the art of navigation. But we have no history of uncivilised peoples untouched by civilisation, and the art of navigation among civilised peoples is vastly different from the art of navigation among the Australians. There does not appear to be any good reason why the Arunta, to take a concrete example, should not have lost the art of navigation if they passed from the north coast southwards. They certainly have no canoes and are probably seldom in need of one. If the Arunta were, by force of economic conditions or hostile pressure, forced westwards and southwards till they reached the sea, it is improbable that, whatever their ancestors may have done, they would be in a position to manufacture a canoe; they might not even retain a tradition of the existence of means of navigation, and would thus have to invent the raft or canoe for themselves.

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[1] **44**, i, 175.

[2] *Ib.*, i, 173.

[3] **33**, 25, 86.

[4] **53**, 304.

[5] **1**, i, 90; **43**, 75.

[6] **44**, ii, 16.

[7] *Ib.*, i, 149.

[8] **33**, 25.

[9] **26**, 8.

[10] **44**, i, 112.

[11] Figured in Edge-Partington, iii, 95.

[12] **1**, i, 90.

[13] **21**, 9.

It is no improbable theory that the west and south-west of Australia were peopled by a continental and not a coast route. It is true that the circumcision and *mica* operation areas do not extend right up to the west coast, but there is nothing to show that the coast tribes were not an offshoot of the tribes of the Eastern area, split off from them, possibly, by an irruption of the central group. If there is a mixture of races in Australia, it would be in the nature of things that some of the first inhabitants should be driven to the coast. If this did in fact happen, there is no reason to suppose that a tribe, emigrating from a comparatively waterless central area, would carry with it the knowledge of canoes, even if their ancestors had reached the continent originally by water and not by land. The ignorance of means of navigation therefore is hardly conclusive.

Dr. Howitt argues that the Tasmanians can never have reached Tasmania by water, much less Australia, their bark rafts being unequal to a sea voyage. Now it is true that the authorities cited in Ling Roth's *Tasmanians* agree that the natives as a rule undertook their voyages only in calm weather; but no statements as to the seaworthiness of their bark canoes are available. It by no means follows that because they appear rude they are not rough weather crafts. In this connection it may be of interest to recall the close resemblance in form between the canoes of the Seri Indians and those of the Tasmanians. The former are, it is true, of cane, and therefore more buoyant perhaps, as well as longer; but the usual means of propulsion are the hands, shells, or the harpoon shaft.[1] If the Seri with their cane canoes can navigate the stormy strait of El Infiernillo with its continual tide-rip, it does not seem out of the question that the Tasmanians should have reached Australia by the sea and not by land. The bark canoes of the Australians do not seem to our eyes particularly safe craft, but they navigate them for miles; and the Anula canoe is reported to be safe in a moderate sea.

It is noteworthy in connection with the Tasmanian canoes that there appear to be in use, at two different points in Australia, canoes of a type closely resembling those of the Tasmanians. It is of course possible to maintain that they are independent developments, due to similarity of local conditions. It does not however appear at all impossible that the partial identity of the Tasmanian and Australian canoes is due to the fact that they were evolved and spread over this large area before the Tasmanians passed into Tasmania. It may indeed be argued that canoes are known only in the south of Tasmania and that this points to their being known previously to the separation of this island. But clearly if the knowledge of the craft had spread over all the undivided continent, it would not have taken long to pass round the shores of Tasmania.

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[1] **58**, xvii, *i*, 215*-220*.

Passing now to the ordinary whole-sheet bark canoe, it seems on the whole probable that it is an Australian invention. There is no trace in New Guinea of any such form.

The problem of the sewn bark canoe is more difficult. On the one hand, it is a widely distributed type, and its possession by the Fuegians is evidence that no very high culture is needed before it is evolved. Again it is a very natural development from the whole-sheet bark canoe with sewn ends; for nothing would be more probable than that accident or conscious attempt at improvement should evolve from this type the "multiple" sewn bark canoe (in two, three, or more pieces). We find in fact the beginnings of the change in Victoria in the big canoes. On the other hand, the proximity of other areas in which the sewn bark or wood canoe is found suggests that it may after all have been an imported idea; and this view is borne out by its limitation to the northern portion of the continent.

When we turn from the bark canoe to the dug-out, we find the problem complicated by the question of whether, as some authorities affirm, an aboriginal type was in use in the north at Port Essington before the Malays began to trade canoes to the natives. If a smaller Australian type was really in existence, this fact, combined with the presence of the dug-out outside the area of the outrigger in the middle of the last century at two remote points on the east, might suggest that the dug-out came *via* Torres Straits, preceding the outrigger, which has undoubtedly reached the continent by this route. It is unfortunate that Bennett, upon whose personal evidence entire reliance can be placed, gives us no more details of the dug-out of the Blue Mountains, or Angas of this type further north; their occurrence in this area at all is of course a curious phenomenon; for it does not appear from either of the two authorities that these canoes were in use on the coast. Again, the absence of detail suggests that both authorities may be relying on hearsay evidence, and that their description really applies to an outrigged canoe; but against this must be set the complete absence of evidence that the outrigger was ever in use so far south.

There is, however, but little ground for supposing that the dug-out of the Blue Mountains is not of native Australian origin. The extremely limited area from which it has been reported suggests indeed that it has been ousted by a superior or more convenient type. If this were so its former extension was clearly northwards and not southwards, for in spite of the ease with which it is manufactured, it is hardly probable that the whole-sheet canoe would displace the dug-out. On the other hand, the sewn bark canoe may well have done so; and we have found this type, at various points on the coast in the area between the Blue Mountains and the most southerly point of the outrigger, in the middle of the last century. At the same time it must not be overlooked that the whole-sheet bark canoe also occurs in this area, in fact right up to the boundary of the outrigger. But in dealing with these questions we must not overlook the question of function; it may well be that the bark canoe has survived, as indeed is indicated by the capacity of the whole-sheet canoes, for use by one or two persons, whereas the sewn bark type, and still more the outrigger, demands for its propulsion the efforts of a larger number.

In the absence of expert evidence it is difficult to say what are the relative figures of merit of sewn bark, dug-out and outrigger, including in the figure, of course, marks for ease of construction and durability. If, however, the simple dug-out occupies the last place, it is a possible theory that it formerly had a wider extension, and was ousted by the sewn-bark type. But if the sewn-bark ousted the dug-out, *a fortiori* should it not have ousted the whole-sheet bark canoe, which it has not done? On the whole, therefore, the dug-out of the south-eastern area seems to be a local phenomenon.

The problem of the outrigger is comparatively a simple one. The double outrigger is reported as far south as lat. 13°; 60 miles further south we find the single outrigger. We may therefore fairly assume that the boundary at the date in question lay between these two points. Not only is the outrigger not reported in the middle of the last century from any point outside the peninsula, but it is expressly stated to be a poor copy of the craft of Torres Straits. Everything therefore points to the Papuan origin of this form of canoe.

The single outrigger which obviously preceded the double form, extends as far as 18° 13′ S. on the east coast, thus overlapping the area of the bark canoe. By simple inspection we arrive at a Papuan origin for the outrigger.

A point of much interest in connection with this question I am compelled to pass over for lack of information, though it might throw light on one question, if not on more. This is the method in which the float is attached to the boom. That the method shown in the Cairns canoe differs from that at present in use in Torres Straits does not, of course, disprove the Papuan origin of the outrigger. The Torres Straits method may well be a later improvement. I hope to undertake at some future time a comparison of the methods used in Australia, New Guinea, Melanesia and Polynesia.

NAMES OF AUSTRALIAN CANOES.

The following list, based on the vocabularies in Curr's *Australian Race* is roughly sorted according to whether (1) only European boats are found; or (2) no boats are found at all; and (3) according to the kind of native boat in use in the locality. It may be noted that there is no direct information as to the use of the canoes in many of the inland areas included in Table IV, the Riverina, of course, excluded. The numbers are those assigned by Curr:—

Table I.—Names of European (?) Boats. West and Centre.

	Place or Tribe.	Name.
10.	Nichol Bay	*yowarda.*
15.	Champion Bay	*kewardie.*
24.	Geographic Bay	*kibera.*
48.[1]	Cooper's Creek	*uko bichi.*
50.	„ „ (near Bulloo)	*ngumboo.*
53.[1]	Lower Bulloo	*boorlee.*
55.[1]	*Dieri*	*pirra.*
63.[1]	Gawler Range	*yoota.*
65.[1]	Mount Remarkable	*youkou.*
67.	Yorke's Peninsula	*jukkoo.*
68.	Adelaide	*bokka* (=bark) *yoko* (*yoko*=bark at Cooktown).
69A.[2]	N.W. Corner of New South Wales	*pulturoo.*
90.	Burketown (17° 30′ S., 139° 40′ E.)	*kamera.*
92.	Mouth of Norman	*nye.*
93.	Midde	*orukkur.*
99.	Cloncurry	*nungkore.*
153.[2]	Barcoo	*wogara.*
154.	„	*doombatung.*
155.	„	*weeter, tangin, oorun.*

Table II.—Names of Bark or Dug-out Canoes. North Coast.

	Place or Tribe.	Name.
1.	Port Darwin	*yŭnoogara.*
2.	*Woolna* (Adelaide River)	*maltigia moerty.*
	or *Limba Karadja* (Port Essington)	*lippee-lippee.*
3.	*Unalla* (Raffles Bay)	*oboen.*

Table III.—Names of Outrigged Canoes. North Queensland.

7.	*Gudang* (C. York)	*angania.*
108.	P. Charlotte's Bay	*tandi.*
109.	Endeavour River	*mariyau, mariyan.*
110.	Weary Bay	*berongaboy.*
116.	Head of Walsh	*murregan.*

Edge-Partington[3] gives *patchie* as the name in the Cairns district. Phillips[4] gives *wangga* and *marrakan* for Cooktown.

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[1] No boats are used in this locality, so far as is known.

[2] No native canoes are used in these localities.

[3] MS. note.

[4] **54**, xxvii, 144.

Roth[1] gives the following words for the canoe and its parts in the Koko Yimidir language:—

Wang-ga	canoe.
Darman	outrigger (? float).
Bantchau	body.
Wakka	bow.
Gorumon	stern.
Kanna-kanna	crosspieces.
Tabul	boom.
Yirinbar	two washboards locked on gunwale.
Biribe	paddle.

TABLE IV.—NAMES OF BARK CANOES. RIVERINA.

	PLACE OR TRIBE.	NAME.
75.	Bourke, Darling River	*būltărŭ* (tulkaru = bark).
76.	Fifty miles lower	*būlyunga.*
78.	Tintinaligi, Darling River	*butherop* (baltha = bark).
79.	Weinteriga	*pulteru* (palta = bark).
80.	Menindie	„
82.	*Marowera*, Murray River	„ , *bankoom.*
83.	Pytu Reach „	*meralti.*
84.	Wellington „	*manno.*
85.	N.W. bend of „	„
86.	Ned's Corner „	*munga.*
87.	*Kemendoh*	*longup.*
88.	*Yittha*	*yongni, kokwunk.*

See below, Nos. 204, 208B, etc.

EAST COAST, QUEENSLAND.

118.	Hinchinbrook Island	*woolgo.*
119.	Herbert River	„
120.	Halifax Bay	„
124.	Cleveland Bay	*oolgaroo.*
	„ „	*wooroo.*
125.	Mount Elliot	*woolgoora.*
126.	Mouth of Burdekin	*karbeyal.*
131.	Cape River	*kooga.*
133.[1]	Mount Black	*oolkooroo.*
134.	Lake Burdekin	*kobbetheba.*
	„ „	*bettel-bettel.*
136.	Port Denison	*rinda.*
143.	Belyando River	*warella.*
	„ „	*balgoo.*

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[1] Bull. No. 4.

	PLACE OR TRIBE.	NAME.
145.	*Aminungo*	*winda.*
147, 148.	Port Mackay, Broad Sound	”
149.	Rockhampton	*undool.*
150.	Lake Dawson, etc.	*tandool.*
153.	Barcoo, see Table I.	
156.	Nogoa River	*weanda.*
157.	Comet River	*kooga* (=bark).
158.	Brown River	”
159.	Dawson River	*boonde.*
	” ”	*gundoo* (=bark).
	Burnett River	*goondu* (=bark).
161.	Boyne River	*kooga.*
163.	Baffle Creek	*kundole.*
164.	Moreton Bridge (N. side)	*kumba* (=bark).
	Maryborough	*kolaro.*
	Near Brisbane	*kumbar* (=bark).
	Fraser's Island	*kooloro.*
165.	Upper Burnett	*kundool.*
166.	*Kabi*	*kombar* (cf. 164).
167.	Upper Brisbane	*koondoo* (=bark).
168.	*Turribul*	”
169.	Condamine	*kundung* (tundo=bark).
170, 171.	Stradbroke Island	*koondool* (koonjool=bark)
172.	Berang Creek, etc.	—
170.	Moreton Island	*oobum.*

NEW SOUTH WALES.

175.	Balonne River	*boondurra.*
176.	*Bigambul*	*gillee* (=bark) *welbon.*
177.	Mungalella Creek	*kooka.*
178.	Richmond River	*burcool.*
	Ballina, etc.	*kindul.*
180.	Queenbulla	*walkia.*
181.	Namoi	*kumbilgal.*
	Namoi	*wyardka.*
182.	Culgoa	*toongoon* (=bark).
183.	*Wailwun*	*mungar.*
184.	Clarence River	*bakool, wolloo.*
185.	Lake Macleay	*woi.*
187.	Manning River	*kooyauk* (koorak=bark).
188.	Hunter River	*buba.*
189.	Hawkesbury River	*nooia.*
190.	Warren, New South Wales	*murrin* (=bark); *wargin.* *warrung* (doorong=bark).
	Bathurst	*kogee.*

	PLACE OR TRIBE.	NAME.
	Bogan River	*mure.*
	Deniliquin	*koonadan.*
191.	Port Jackson	*nowey.*
192.	Botany Bay	*yernera.*
193.	Shoalhaven	„ , *mudyeri.*
194.	Jervis Bay	*kurridja.*
196.	Queanbeyan	*murring.*
197.	Moneroo	*mamat.*

VICTORIA.

199.	Swan Hill	*unkooi.*
201.	Piangil	*yungobi.*
202.	Bumbang, Murray River	*longoi.*
204.	Tatiarra	*yongoe.*
205.	Mount Gambier	*wola, bēm, woggo.*[1]
207A.	Lake Hindmarsh	*yoongooip.*
207C.	Upper Glenelg	*torong* (= bark).
207D.	Glenelg	*ngnanak* (= bark).
207E.	Woodford	*wowwo.*
207G.	Hamilton	*yaongalo.*
207H.	Mount Rouse	*yowargalook.*
207I.	Lake Condah	*tholong.*
207J.	Hopkins River	*torong* (= bark).
208A.	Moulmein	*yungwitch.*
208B.	Lake Boga	*yungoot.*
208J.	Moorabool	*korong, yaoot.*
209A	*Ngooraialum*, etc.	*kōrom.*
210.	Gippsland	*gre, yuro.*
211.	Omeo	*worbang* (worogang = bark).
213.	Upper Murray	*moutha.*
214.	*Bangerang*, etc.	*māttha, matta.*
214D.	Yiilima	*bootjo.*

In a MS. vocabulary at the Anthropological Institute boat is translated thus:—

Bacchus Marsh	*yowrulaí wok.*
Melbourne	*goorrung.*

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[1] MS. vocab. (Anth. Inst.).

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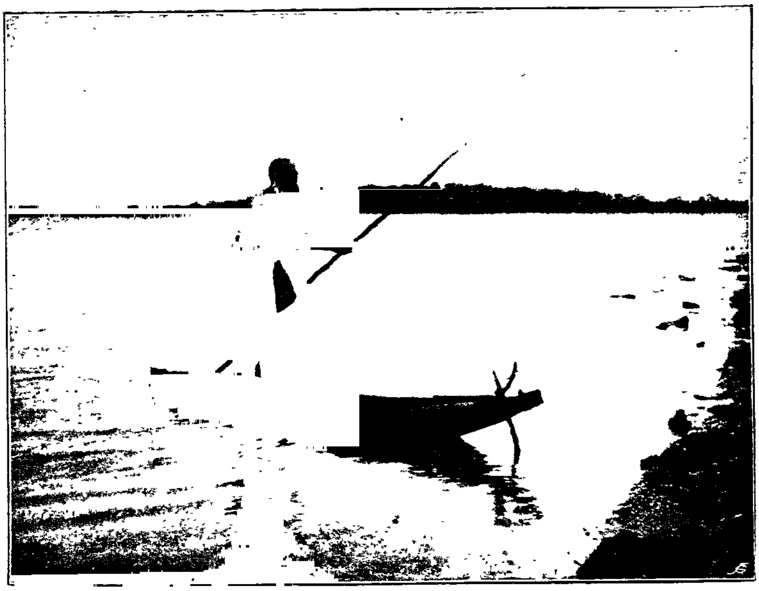


Howitt: "Tribes of S.E. Australia, p. 424."

FIG. 1.—KURNAI, BARK CANOE, VICTORIA.

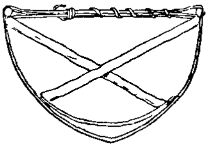


FIG. 2.—CROSS SECTION.

FIG. 3.—BOW.

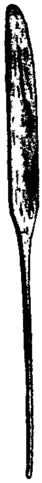


FIG. 4.—PADDLE.

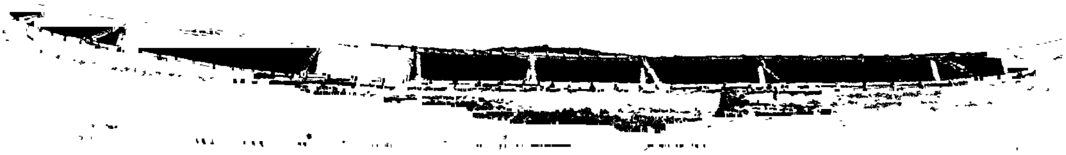


FIG. 5.—BARK CANOE OF ANULA TRIBE.

Figs. 2-5. Spencer and Gillen, "Northern Tribes of Central Australia."
Reproduced by the courtesy of Messrs. Macmillan & Co.

AUSTRALIAN CANOES AND RAFTS.

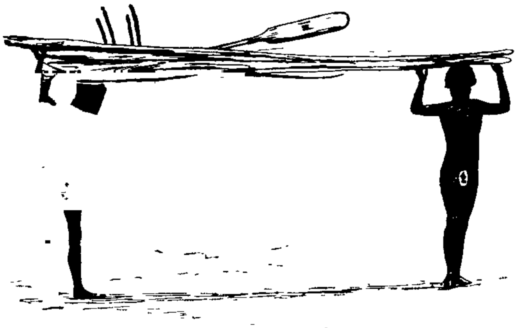


Fig. 1 Natives carrying Raft.

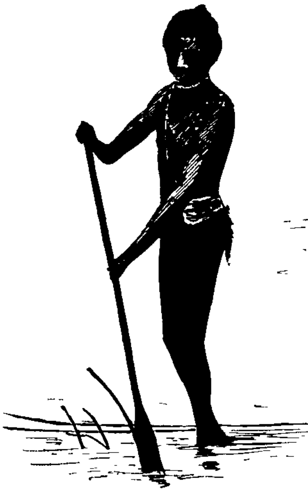


Fig 2 Raft

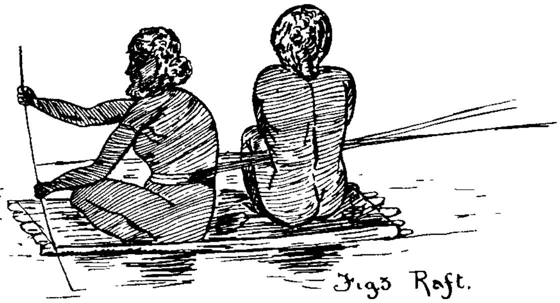


Fig 3 Raft.

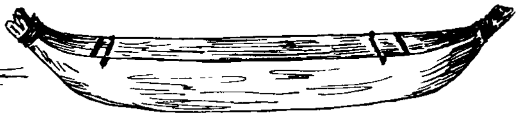


Fig. 4. Bark Canoe,

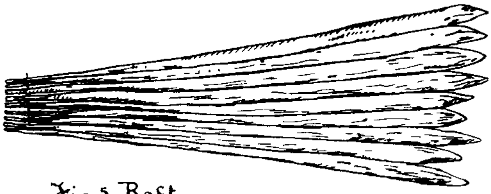


Fig 5. Raft.

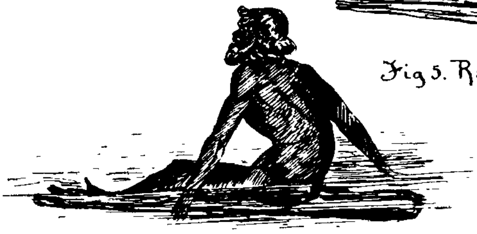


Fig 6 Log of Wood used as a raft

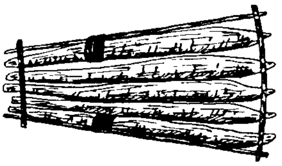


Fig. 7. Raft.

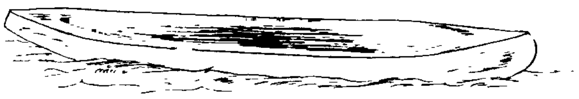
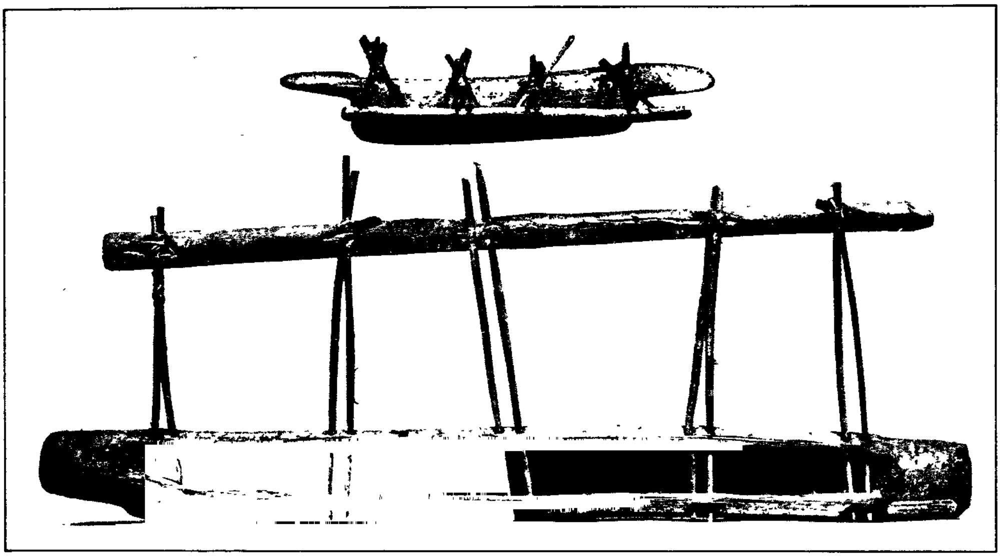


Fig 8. Canoe.

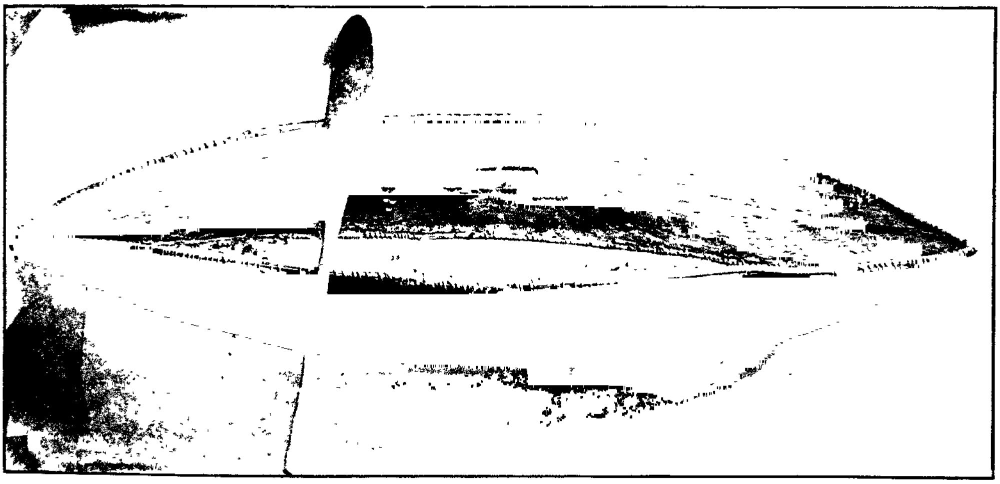
Figs. 1 and 2. King's Sound. Fig. 3. N.W. Australia. Fig. 4. N.S.W. Fig. 5. Roe's Group, N.W. Australia. Fig. 6. Rosemary Islands, N.W. Australia. Fig. 7. Hanover Bay. Fig. 8. Wessel Islands.

AUSTRALIAN CANOES AND RAFTS.



British Museum.

FIG. 1.—OUTRIGGED CANOE, CAIRNS DISTRICT, QU.



Museum f. Völkerkunde, Berlin.

FIG. 2.—BARK CANOE, PORT DENISON, QU.

AUSTRALIAN CANOES AND RAFTS.

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58. Washington, *XVII. Annual Report of the Bureau of Ethnology*, Part I.
59. Antwerp, *Bulletin de la Société de Géographie.*
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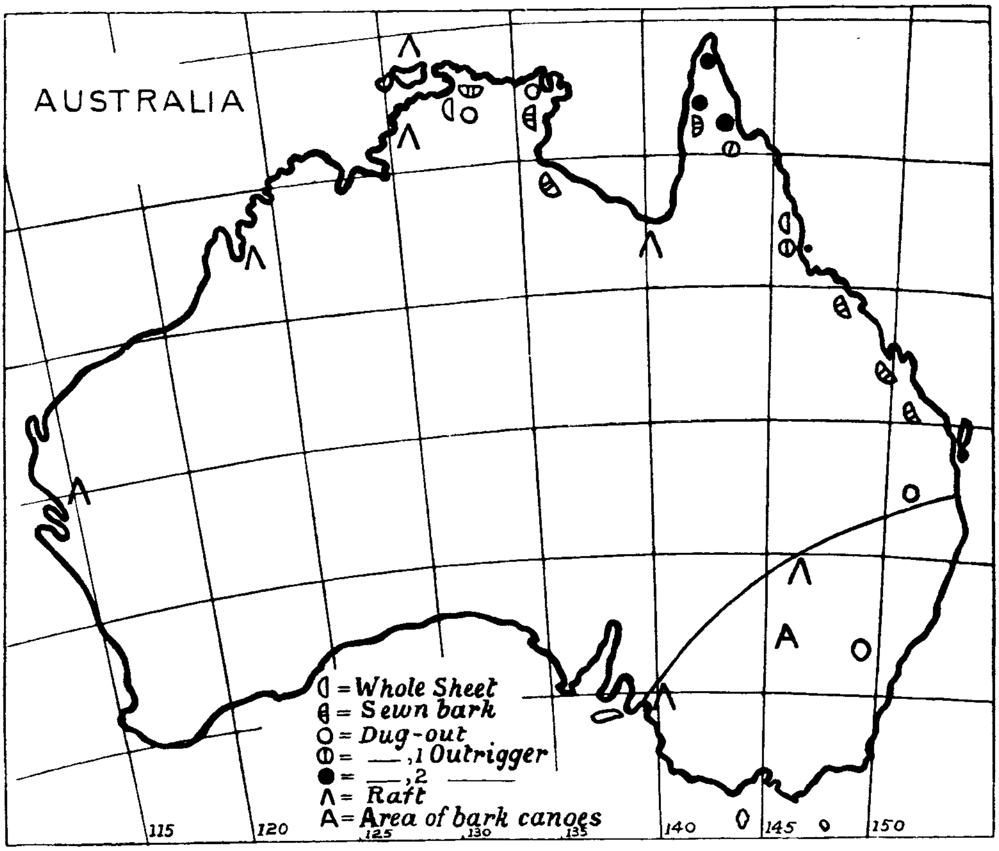

FIG. 3.

Description of Figures in Text.

Fig. 1. Bark canoe, with mud in ends, from Brough Smyth.
Fig. 2. Bark canoe in Pitt Rivers Museum, Oxford.
Fig. 3. Map showing distribution of canoes and rafts.

My thanks are due to Dr. von Luschan for the illustration, Plate XII, Fig. 2 ; to Mr. Henry Balfour for Fig. 2 ; to Mrs. Savile Kent for permission to publish the sketch, Plate XI, Figs. 1 and 2 ; to Messrs. Macmillan for the blocks on Plate X ; to the authorities of the British Museum for Plate XII, Fig. 1, and to the Royal Geographical Society for permission to sketch Plate XI, Fig. 8.

CONTRIBUTIONS TO EGYPTIAN ANTHROPOMETRY. II.—THE COMPARATIVE ANTHROPOMETRY OF THE MOST ANCIENT AND MODERN INHABITANTS.

BY CHARLES S. MYERS.

A. COMPARISON OF MEASUREMENTS AND INDICES.

1. *Previous Work.*

IN 1902, an attempt was made to investigate this problem for Egypt by the biometric workers under Professor Karl Pearson at University College, London.[1] But, as I shall show, the only material of which they could at that time make use was not fitted for the purpose. The data which I have since been able to collect throw a somewhat different and, I hope, a more trustworthy light on the subject.

Miss Fawcett and her collaborators had at their disposal Mr. Randall MacIver's measurements of about 100 skulls from Abydos, and their own more elaborate measurements of parts of some 400 skeletons belonging to a similar period, excavated by Professor Petrie at Naḳada. The date of this so-called "prehistoric" material may be approximately fixed at 5000 B.C. It was compared (*a*) with a collection of about eighty modern skulls from Cairo, and (*β*) with a collection of about 240 Theban skulls dating from a period nearly midway between the "prehistoric" and the present time. The measurements of these collections had been published in the German catalogue, issued as an offprint of the *Archiv für Anthropologie.*

Comparing the measurements and indices of the above groups of skulls from Naḳada, Thebes, and Cairo, the writers of the *Biometrika* memoir were impressed "with the striking likenesses between these three groups" (p. 432). "But," they added, "we are still forced to the conclusion that in certain characters a progressive evolution has taken place, for these characters are substantially changed . . . . The most noteworthy of these changing characters are the decreasing [skull] length (L), the increasing [skull] breadth (B), the increasing frontal breadth (B′), the increasing auricular height (OH), and the increasing total facial height (GH) for the males" (pp. 432–433). To these they also add the diminishing cranial capacity (C).

The following table gives the measurements which are under discussion:—

---

[1] "A second study of the variation and correlation of the human skull, with special reference to the Naqada Crania," by Cicely D. Fawcett, B.Sc., assisted by Alice Lee, D.Sc., and others. *Biometrika*, 1902, I, pp. 408–467.

Series.	L.	B.	B′.	OH.	GH.	C.
Naḳada ("prehistoric")	185·13	134·87	91·06	115·59	112·02	1381·0
Thebes ("ancient") ...	181·94	136·63	93·83	114·34	114·31	1387·63
Cairo ("modern") ...	179·11	136·51	94·08	116·07	115·74	1356·1

Now, closer examination raises grave doubts as to the reality of these so-called "changing characters." Indeed one of them we can clearly reject at once. In auricular height (OH) the modern and "prehistoric" series differ only by half a millimetre, an amount far too small to have any significance. As regards two of the characters, skull-breadth (B) and total facial height (GH), I have not been able to make absolutely certain of the modern material which is here chosen for comparison. In Table V(*a*) of the *Biometrika* memoir, for example, the mean skull breadth of the modern Cairene series is given as 136·76, in Table IX as 136·51. The number of skulls in the series is stated to be fifty-nine. I have obtained the breadth measurements of forty-seven modern Cairene male skulls from the Leipzig collection; I notice also a few others in the Munich collection, which may have gone to make up the fifty-nine. The standard deviation[1] of this series of forty-seven in skull-breadth is 6·67. If we assume that it is about the same for the larger series of fifty-nine, then the probable error of the difference of the Naḳada and Cairene series in mean breadth is $\pm 0{\cdot}71$, which is little less than half of the found difference $(136{\cdot}51 - 134{\cdot}87) = 1{\cdot}64$. If the same supposition holds with the total facial height, the differences in each case are not large enough to be with certainty significant. We have, moreover, to remember that the measurements in the two series were made in the one case by German and in the other by British observers, and that a resulting average difference of a millimetre is by no means unlikely.

Turning now to the minimum frontal breadth (B′), we deal with a measurement which is not easily taken with precision. Errors due to the personal equation of the observer are specially likely to arise. The same kind of error is notoriously still more prevalent in the determination of skull capacity. As Dr. Lee and Professor Pearson have themselves elsewhere noted, "two different experimenters may give a mean skull-capacity for a series which differs by 15 to 40 cub. centims."[1] We can therefore draw no conclusion when two series measured by different observers differ by (1381 − 1356 =) 25 cub. centims.

---

[1] The standard deviation, σ, is an index which gauges the average individual variation of the members of a series from the mean, A, of that series. If n be the number of members and if Σx be the sum of the individual differences from the mean, $\sigma = \sqrt{\frac{\Sigma x^2}{n}}$. The coefficient of variability, C, is a hundred times the ratio of the standard deviation to the mean, $= \frac{100\,\sigma}{A}$. The probable error of the mean is $\pm\, 0{\cdot}6745\,\frac{\sigma}{\sqrt{n}}$, that of the standard deviation is $\pm\, 0{\cdot}6745\,\frac{\sigma}{\sqrt{2n}}$, and that of the coefficient of variability is $\pm\, 0{\cdot}6745\,\frac{C}{\sqrt{2n}}$ approximately. The probable error of the difference of two means is the square root of the sum of squares of the probable errors of the means.

The difference in skull length between the Naḳada and the Cairene series, a difference of 6·02 mm., is the one measurement which certainly looks significant. But I find that the standard deviation of the Cairene skulls from their mean skull-length reaches the high figure of 8·02,[2] while that of the Naḳada series is 5·75. In other words, the series of "prehistoric" skulls is being compared with a most heterogeneous modern series from a crowded city, for the purposes of determining what changes the Egyptian population has undergone. This procedure is obviously inadmissible. It would be as fair to compare the people of an ancient Scottish town with the mixed population of modern London, in order to discover the significant changes brought about by evolution or racial admixture during the past few thousand years!

In the *Biometrika* memoir, it will be noted that the Cairene skulls are stated to be "almost certainly Coptic." No evidence is offered for this statement, and I can find none. At all events, one does not need great familiarity with *fellahin* grave-robbers to be sceptical.

A comparison of the Naḳada with the Theban series is open to a similar objection, for the mixed population of ancient Thebes—with its circumference of twelve miles and its hundred gates—must be altogether incomparable with the inhabitants of a small prehistoric town like Naḳada.

2. *The Present Material.*

Unfortunately, no more suitable material for this biologically interesting comparison existed than the above, until an opportunity was given me during the years 1901–2 to obtain anthropometric data from the troops of the Egyptian army. By recording the birthplace of the parents of each soldier, I was able to group and subsequently to study the measurements of the soldiers according to their *provenance*.

I am thus able to furnish data obtained from the people dwelling in the contiguous provinces of Ḳena and Girga, and to compare them with the Naḳada statistics which have been so carefully elaborated by Professor Pearson's school of workers.

The *fellahin* conscripts of Ḳena and Girga whom I measured came for the most part from small river-side villages, the most northern and southern of which lie about 250 miles apart and equi-distant from the Naḳada site. In other words, these modern people live under similar conditions and *in the same region of the valley of the Nile* as did their Naḳada ancestors about 5000 B.C.

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[1] *Phil. Trans. Roy. Soc.*, 1901, vol. cxcvi, p. 228.

[2] In a series composed of Australian, Guanche, Eskimo, and Chinese skulls, as heterogeneous as can be imagined, the standard deviation in head-length amounts to 8·389! (*Man*, 1903, p. 31.) The standard deviations of the head-breadth and cephalic index of the Cairene skulls are likewise great; but throughout the probable error of these constants is high owing to the relatively small size of the series.

The following table shows the cephalic index and the head-measurements, taken in the "prehistoric" series on the skull, and in the modern series on the living head:—

Series.	Head-length.		Head-breadth.		Cephalic Index.	
	No.	Mean.	No.	Mean.	No.	Mean.
Naḳada ("prehistoric")... ...	139	185·13	139	134·87	130	72·99
Ḳena ("modern")	53	194·79	53	143·91	53	73·94
Girga ,, ...	83	194·53	83	144·33	83	74·25
Ḳena and Girga ("modern") ...	136	194·63	136	144·16	136	74·13

The difference between these measurements of "prehistoric" and modern people must be almost wholly due to the disturbing influence of the thickness of the scalp. For the results of Welcker's investigations upon thirteen male subjects[1] show that the average thickness of the scalp at the middle of the forehead is 4·3 mm., and that at the back of the head it is 6·8 mm. As, however, the hair of by far the greater number of my Egyptian subjects had been closely cropped, it will be a fair procedure to subtract 10 mm. from the head-length and 10·5 mm. from the head-breadth. We may also deduct a proportionate figure, 1·6, from the cephalic index. The figures then become:—

Series.	No.	Head-length.	Head-breadth.	Cephalic Index.
Naḳada ("prehistoric")	139	185·13	134·87	72·99
Ḳena and Girga ("modern")... ...	136	184·63	133·66	72·53

Whence I conclude that there is no essential difference between the head dimensions[2] *of the "prehistoric" and those of the modern population of this region of Upper Egypt.*

But this procedure of reducing measurements of the living in order to make them comparable with those of the dried skeleton is obviously attended with danger. Before we can legitimately pursue further conclusions in this subject, we must await a collection of modern skulls from Naḳada or some neighbouring region.

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[1] Schiller's *Schädel und Todtenmaske*, Braunschweig, 1883, quoted by Lee and Pearson (*loc. cit.* p. 251).

[2] The auricular heights measured on the skull and on the living head, differ by a hitherto unobserved and undetermined amount, which must mainly depend on the pressure exerted on the living subject.

B. COMPARISON OF VARIABILITY.

An interesting study is yet open to us, namely, a comparison of the homogeneity of the modern with that of the ancient population of the same district. The question arises, Are there wider deviations from the average measurements among the modern than among the ancient inhabitants? Or, has the homogeneity, so far as it is determinable by variability, remained constant in spite of conjectural evolutionary changes and the later admixture of invading peoples? The replies to this inquiry are embodied in the following table, which gives the standard deviations (σ) and the coefficients of variability (C), each with its probable error,[1] for certain head-measurements. If we can generalise from these measurements, *it is evident that the homogeneity of the Egyptians of this district is the same to-day as it was seven thousand years ago.*

Series.	Head-length.			Head-breadth.		
	No.	σ.	C.	No.	σ.	C.
Nakada	139	5·75 ± 0·23	3·17 ± 0·13	139	4·60 ± 0·19	3·29 ± 0·13
Kena and Girga	136	5·83 ± 0·24	3·00 ± 0·12	136	4·31 ± 0·18	2·99 ± 0·12

Series.	Cephalic Index.			Auricular Height.		
	No.	σ.	C.	No.	σ.	C.
Nakada	130	2·80 ± 0·12	3·83 ± 0·16	140	4·46 ± 0·18	3·86 ± 0·16
Kena and Girga	136	3·04 ± 0·12	4·10 ± 0·17	64	4·47 ± 0·27	3·07 ± 0·18

Series.	Horizontal Circumference.			Upper Facial Index.		
	No.	σ.	C.	No.	σ.	C.
Nakada	118	13·00 ± 0·57	2·54 ± 0·11	76	4·52 ± 0·25	6·41 ± 0·35
Kena and Girga	57	13·38 ± 0·84	2·45 ± 0·15	135	3·14 ± 0·13	6·53 ± 0·27

The head-measurements that I have chosen seem to me those which are least open to objection in a comparison of the dimensions of the living head and the skull. The nasal index, for example, would be quite inadmissible. Its absolute value is about half again as great upon the living as upon the dead: on the "prehistoric" skulls it averages 51·08, among the Ḳena and Girga folk 78·22. There is hence a marked disagreement in standard deviations (4·18 and 7·68 respectively), which, however, is largely corrected in the coefficients of variability, 8·18 and 9·82. If, however, we bear in mind how much more variable must be the breadth of the cartilaginous nostrils than the width of the bony nasal aperture, we shall still hesitate to make a comparison in variability between the nasal breadth-measurements or nasal indices derived from the living body and those derived from the skull. Measurements upon the long bones are equally inadmissible for comparison, first, because they are taken only with approximate accuracy on the living; secondly, because the modern conscripts are especially chosen for their physique.

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[1] See note on page 81 for an explanation of these constants.

An objection may here be met that in the Naḳada series we are dealing with a mixed male population of children, youths and men, while the Ḳena and Girga troops are a body of adults *specially selected* owing to their stature and chest-measurements, and consequently yielding a very erroneous conception of the variability of the *entire* male population at the present day. I shall be able to show that this objection has in reality no weight.

In the first place, there is hardly reason to suppose that a significant correlation exists between stature and the above head-measurements, less still between stature and cephalic and facial indices. Further, we have no historical evidence of the absorption of a specially tall or short race into Egypt, distinguished by other physical characteristics from the previous inhabitants. Nor, so far as I know, have we evidence that the tall individuals of a district are less variable in head and face indices than the general population.

Secondly, a vast number of the Egyptian soldiers are young adults ranging in age from eighteen to twenty-five, while in the Naḳada series the male average is not disturbed by a single child's skull below the age of fifteen.

In the third place, I have expressly calculated the averages of several head-measurements from thirty-five of the tallest of the Naḳada individuals, who may thus be reasonably considered comparable with the selected conscripts of the modern Egyptian army.[1] And I find that neither in average dimensions nor in the variability of those dimensions are they perceptibly different from the general male Naḳada population.

C. COMPARISON OF FREQUENCY-DISTRIBUTIONS.

The following diagrams show the distribution of the various measurements of head-length, head-breadth, auricular height, cephalic index, upper facial height and nasal height:—

---

[1] This procedure is fortunately possible, thanks to Dr. Warren's excellent monograph on the Naḳada skeletons (*Phil. Trans. Roy. Soc.*, 1898, vol. clxxxix, pp. 135–227), which enables the anthropologist to select the crania which have a correspondingly great tibial length.

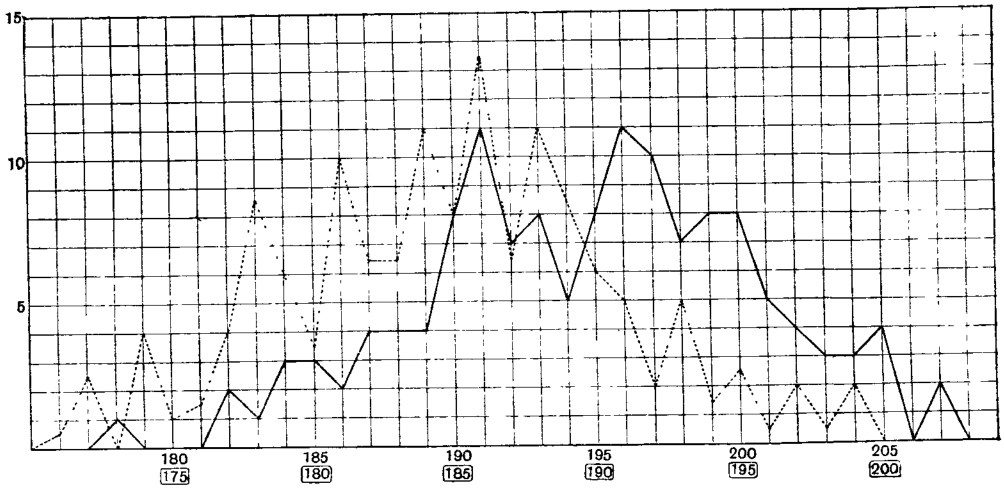

FIG. 1. HEAD-LENGTH.

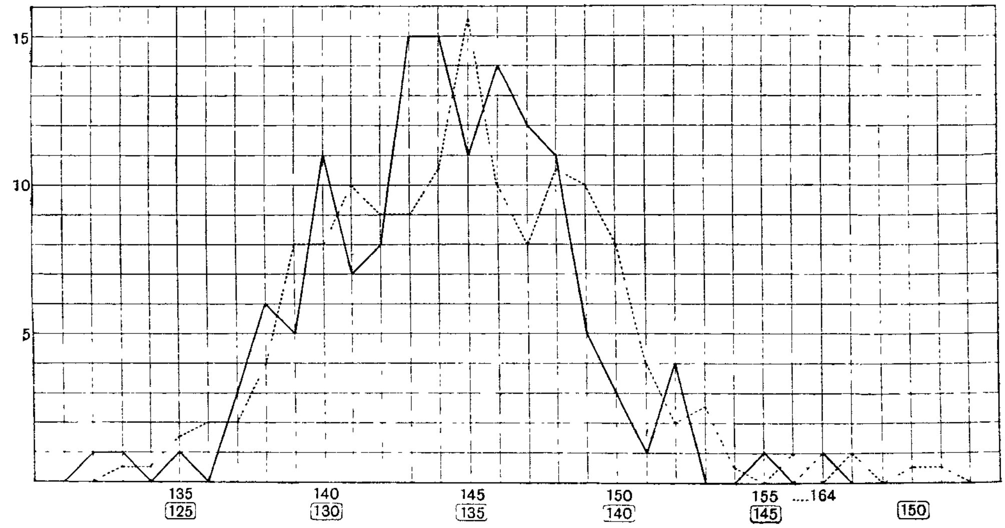

FIG. 2. HEAD-BREADTH.

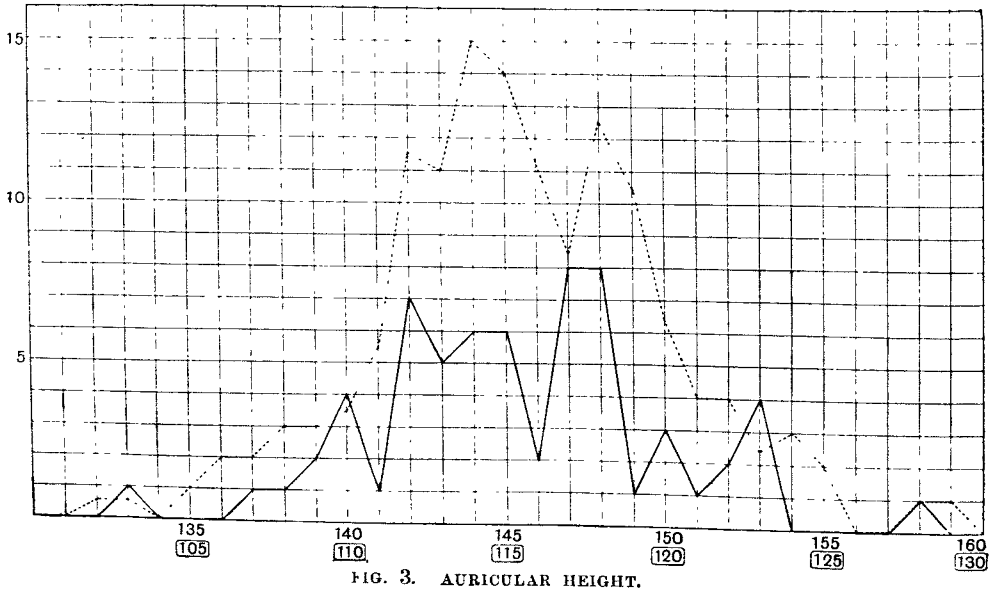

FIG. 3. AURICULAR HEIGHT.

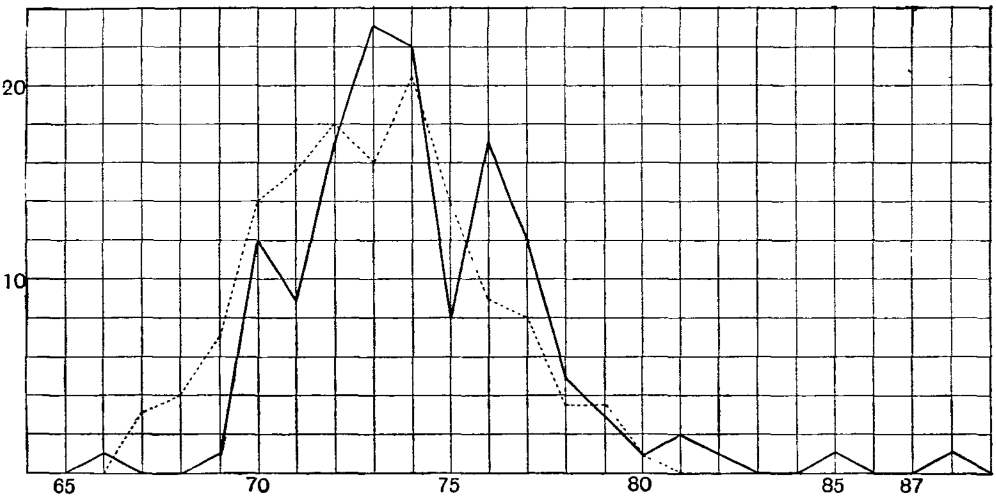

FIG. 4. CEPHALIC INDEX.

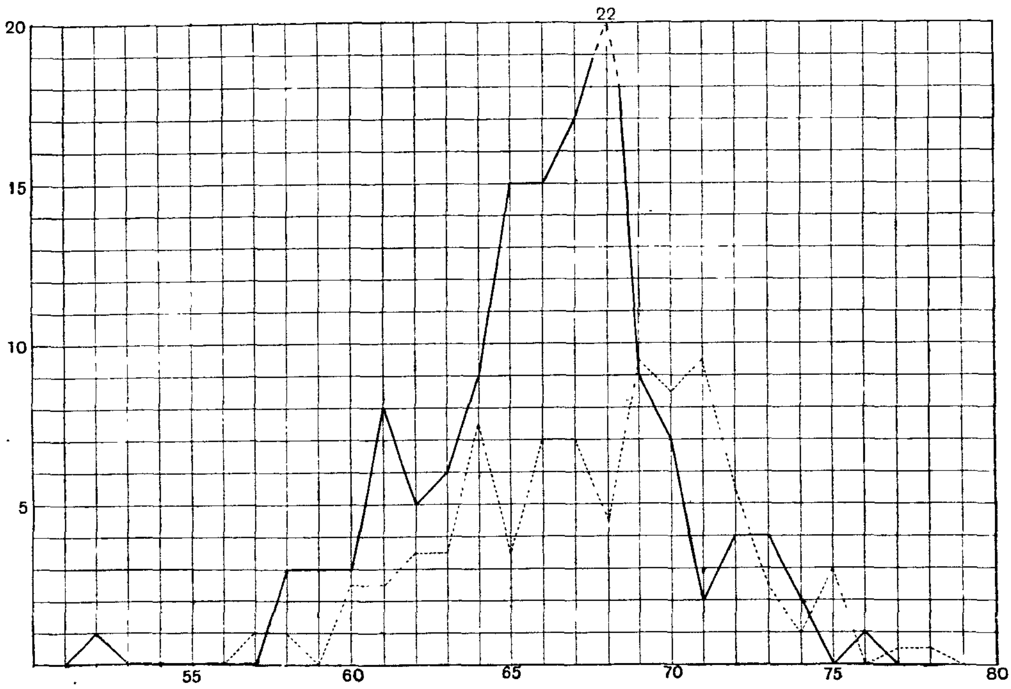

FIG. 5. UPPER FACE HEIGHT.

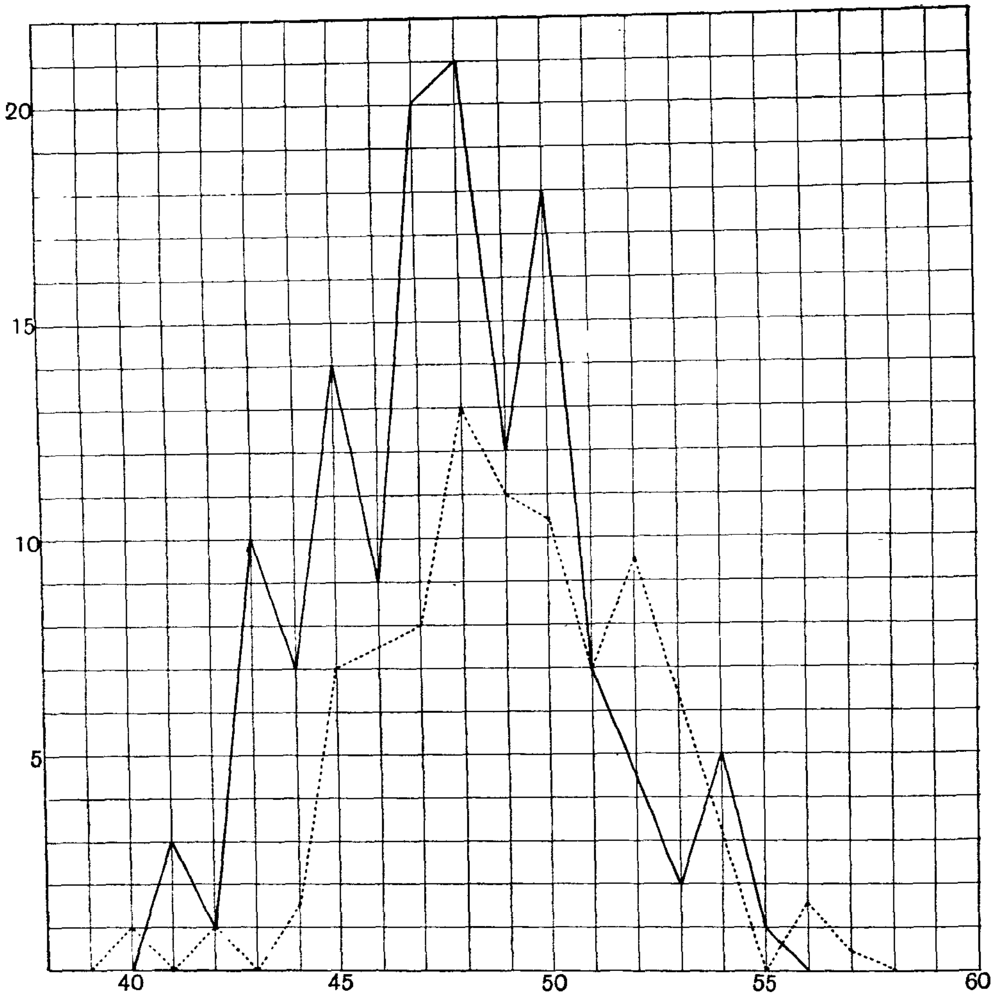

FIG. 6. NASAL HEIGHT.

As usual, the horizontal line or abscissa represents the measurement, the vertical line or ordinate represents the frequency. Each diagram will be seen to contain two distributions. The strong line refers to my own measurements of the modern Ḳena and Girga people, the dotted line to Miss Fawcett's measurements of the "prehistoric" Naḳada people. Where, in order to save space, the abscissa is marked by two rows of figures, the upper refers to the modern, the lower to the "prehistoric" series.

In comparing the two distribution-curves in each of these diagrams, allowance must be made for the differences in measurement upon the living and upon the skull, which have been already referred to on page 83 of this paper. A difference of 10 mm. in the head-length, of 10·5 mm. in the head-breadth, and of 1·6 units in the cephalic index was there premised. Probably the difference to be allowed for in the upper facial and in the nasal height, as measured on the living and on the skull, does not exceed a millimetre. The determination of the upper facial height, however, on the skull is often inaccurate owing to breakage.

Having made these allowances, we are in a position to note that there is no very striking dissimilarity in the distribution-curves of the measurements of "prehistoric" and of the modern series. On the whole, the curves show similar scatter and similar means: they differ chiefly in the position of subsidiary apices. Now, the whole purport of Miss Fawcett's paper is to prove that by far the majority of the many-peaked curves which beset the anthropologist are the result of measuring insufficient numbers of individuals, that the position of these peaks will widely vary in different samples of the same community if the samples each contain too few measurements, and that in all probability if only our measurements of a community were numerous enough the several peaks would disappear, merging into a smooth and uniform curve. The *Biometrika* memoir, therefore, aims at showing the probability that the several peaks on each of the distribution-curves of the Naḳada measurements are merely due to insufficient data. It would involve too great statistical detail to demonstrate the same probability here for my own series of modern measurements.[1] But without entering into such laboured calculations, it is perhaps evident that the distribution of the measurements of upper facial and of nasal height in the modern population would, with a sufficient number of data, probably yield a smooth, single-peaked curve. It is also fairly clear that in the three head-measurements the distribution-curves of the modern series would fit the theoretical smooth curve as well as, nay, perhaps better than, the distribution-curves of the "prehistoric" series.

I leave to my next paper the question as to whether ethnological types can be dissected from these curves, when we shall have to compare measurements on samples of Egyptians coming from diverse regions of the Nile Valley. For the present I will only observe that, for aught we know, a single smooth distribution-curve may be really compounded of two or more curves, each corresponding to a "type." Consequently similarity of distribution-curve does not necessarily mean similarity of type.

D. COMPARISON OF CORRELATION.

It is a matter of interest to find out whether pairs of measurements are differently correlated in the "prehistoric" and in the modern people. The degree of correlation of any two quantities in a series may be measured by Professor Pearson's coefficient of correlation.[2]

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[1] The authors of the *Biometrika* memoir select the breadth of the female Naḳada skulls in order to determine the goodness of fit of the many-peaked observed distribution to the smooth theoretical distributions. Assuming that the skulls, of which these were a sample, truly obey the normal (binomial) distribution, they find (p. 454) that a more peaked polygon than that observed would result in 83 out of 100 trial samples. I have made a similar calculation for the modern Girga and Ḳena head-breadths. I find that the probability figure is here 72, as compared with 83 of the Naḳada distribution.

[2] This coefficient, r, is obtained by adding together algebraically the series of products, xy of the two differences between the members of each pair of measurements in the series and

I have calculated the coefficients of correlation between three pairs of measurements, viz., between the length and breadth, between the length and auricular height, and between the breadth and auricular height of the heads of the modern Ḳena and Girga people.

The writers of the *Biometrika* memoir calculated the coefficient of correlation between skull length and breadth of the "prehistoric" series. But as, unfortunately, they did not take the *auricular* height into consideration when dealing with correlated measurements, I have expressly calculated the Naḳada coefficients of correlation between skull-length and auricular height and between skull-breadth and auricular height.[1] The various coefficients and their probable errors are shown in the following table:—

Series.	No.	Correlation L. and B.	No.	Correlation L. and Au. H.	No.	Correlation B. and Au. H.
Naḳada ("prehistoric") ...	139	0·344 ± 0·050	64	0·404 ± 0·071	64	0·174 ± 0·082
Ḳena and Girga ("modern")	136	0·082 ± 0·057	64	0·237 ± 0·080	64	0·379 ± 0·072

We see that length and breadth and length and auricular height of skull are much more closely correlated in the "prehistoric" than in the modern people, while the reverse relation holds in the correlation of skull breadth and auricular height.

In the *Biometrika* memoir, the only similar comparison of coefficients of correlation is that drawn between the Naḳada and the Theban series. The correlations of capacity and horizontal circumference, of capacity and inter-auricular arc, of inter-auricular arc and horizontal circumference, of the skull are compared; with the result that "the historic Egyptians [*i.e.* the Thebans] show in every case higher correlation" (p. 459). The correlations which I now publish show how much caution is needed in basing general conclusions as to the relative closeness of correlation on a few coefficients only. It would be useless to attempt to explain the above irregularity of correlation until more and larger series have been investigated.

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their respective average, and by dividing this sum by the product of the respective standard deviations (σ_1, σ_2) and by the number (n) of pairs of measurements in the series. Thus $r = \frac{\Sigma xy}{n\sigma_1\sigma_2}$. It becomes unity when the correlation is perfect, zero when there is no correlation, and positive or negative according as the correlated members vary in the same or in opposite directions. The probable error of this coefficient is obtained from the formula $\frac{0·6745(1 - r^2)}{\sqrt{n}}$.

[1] The correlations between total cranial height and other measurements are published in the *Biometrika* memoir. But as the total cranial height cannot be determined on the living head, these data are not available in the present comparison.

SUMMARY.

1. There is no evidence that the "prehistoric" and modern population of southern Upper Egypt differ in physical measurement.
2. The homogeneity of the "prehistoric," as determinable by standard deviation, is the same as that of the modern population inhabiting like regions of the Nile Valley.
3. The relative correlation of cranial measurements in the "prehistoric" and modern population shows great irregularity.

STONE FORT AND PITS ON THE INYANGA ESTATE, RHODESIA.

By R. N. Hall, F.R.G.S.

[Presented April 4th, 1905. With Plates XIII, XIV.]

The Inyanga Range lies in south-eastern Zambesia, and is a wild mountainous country rising to 10,000 feet above sea-level. The district is 250 miles north of Great Zimbabwe, and 300 north-east of the Matoppo Hills. The Inyanga Mountains cover an area extending about 100 miles from north to south and 60 miles from east to west, and lie inland 200 miles west of the shore of the Indian Ocean. An area of this range, some 60 miles by 40 miles, is covered with the traces of some long-forgotten people.

The hills are of both granite and blue slate. Their form is that of long lines of very high perpendicular cliffs, each line of cliffs extending for miles. The hills on the granite formation are rugged and most fantastic in shape. Those on the slate formation have graceful curves and are gently rounded. Between the lines of cliffs are rolling downs of great extent. On the summits of the hills are stone forts, possibly a hundred of these structures, while up the sides of the hills, from base to summit, are stone terraces. Round their lower flanks run old aqueducts, each one two or three miles in length. On the downs in the valleys and on the lower flanks of hills are very many hundreds of stone-lined pits, and, also in the valleys, at every 50 yards, are the most obvious evidences of old occupations, while almost every stone appears to have passed through human hands.

The great extent of country covered with these remains is simply marvellous. They have no similitude whatever to the remains of ancient buildings found in any other part of Rhodesia. In every feature they are altogether dissimilar.

Inyanga Fort.

These ruins are situated two miles south-east of Mr. Rhodes' farmstead, on the comb of the ridge of a long kopje which runs from north-east to south-west. The hill rises steeply on either side, but ascends in gentle slopes at its extremities.

The ruins command a strong strategic position and a most extensive view, and overlook valleys and downs which are literally thickly covered with the remains of stone dwellings and walls. The precipitous cliffs of Inyanga Mountain, 9,000 feet above sea-level, raise their gigantic forms some four miles to the east.

The valley on the summit of the Inyanga Range shows a fair and fertile country, stretching in one azure sea of hills and valleys to Nani and on towards Katereri's kraal. Towards the west a similar view extends in giant steppes in the direction of Headlands and Marandelas. The southern view is narrowed by the lofty granite bluffs of York Hills, while Van Niekerk's farm and farmstead fills in the nearer distance. To the south-east, at a distance of some three miles, are other ruins similar to the Inyanga Fort, only smaller and in a better state of preservation. These are on the eastern side of the summit of a balloon-shaped kopje, the northern face of which is steep and inaccessible. They are known as the Bideford Ruins, being on the Bideford farm of Mr. Rhodes' estate.

The farmstead appears to be far below in a valley, though actually it is built on the face of a hill. Numerous cascades in several valleys appear to be but streaks of white, and kraals and other objects below can only be discerned with the aid of field glasses.

Camping out at these ruins at this high elevation (7,000 feet) one is in a keen atmosphere, far cooler than at the farmstead, and the nights even in the summer are found to be much colder. Mists envelope the hill at times, but they roll off and on very quickly and suddenly. The scenic effects produced by these mists are exceedingly fine and weird, and the contrast between the opaque wall of vapour and the sunny valleys below, shown through passing rifts, is indescribably fascinating. The usual daybreak view from this point is of hundreds of sunbathed rocky islands standing out from a white sea, or a fleeting alpine view in miniature.

All the walls of these ruins are built upon a curved plan, with the exception of two, which are built upon direct lines, and one of these, which divides enclosures II and III, is obviously of poorer and later construction. In other respects the features are angular, the walls perpendicular and without perceptible batter-back, the entrances angular and not rounded, and the loopholes in the walls square. The plan closely resembles the rising terrace or "wedding-cake" style of buildings, which crown and cover the summits of hills in a portion of Western Matabeleland, but it would be unwise at present to place too much reliance on the parallelism.

A close inspection of the Inyanga Fort leaves a strong impression of a combination of both skilled and unskilled design and construction extremely difficult to reconcile owing to the contradictory evidences. This combination of rude and skilled workmanship suggests that the actual labour was that of a very old native people, with the inclusion of features of architecture conveying the idea of at least some supervision and direction of a more skilled race of builders. This impression is strengthened when one considers the presence, in the very vicinity, of such buildings as that of Inyanga Fort, a type of very many others in the Inyanga district, of aqueducts, miles in extent, which score the faces of the hills in corresponding areas to those occupied by forts, which aqueducts, as well as the associated hill-terraces, must have been the work of skilled engineers and not that of any native people left to its own power of initiative.

The interesting and peculiar features of these ruins, as distinguished from the general features presented by ruins in Matabeleland and elsewhere in Mashonaland, may thus be stated:—

Covered entrances.—These are very numerous, both in the outer main walls and also in the divisional walls. They are all angular, and have large flat slabs of stone placed over them for roofing, and none have any portcullis grooves. The average measurements of these entrances run as follows: floor to roof, 3 feet 10 inches; width, 2 feet or 2 feet 2 inches; length through wall, 6 feet; additional length through banquette wall, which runs round the inside of the main outer walls and some of the divisional walls, from 3 to 5 feet, making the total length of the covered entrances to average from 10 to 12 feet. There are twenty-one covered entrances still intact, and some five others which are now roofless and dilapidated.

Loopholes.—In all walls, both main and divisional, there are square loopholes which run through the wall and banquette, thus giving them an average length of from 8 to 12 feet, according to the width of the banquette. The holes are no less than 12 by 12 inches in height and width, and all are fairly square throughout their lengths. These holes are found in rows at about 3 to 5 feet above the ground, but they are not all exactly on the same level. The holes are fairly distributed along the walls. There is a loophole immediately on either side of every entrance.

It would be possible to shoot an arrow through the shorter holes, but natives affirm that this could also be done through those which are still intact. The total number of these holes at these ruins must be at least sixty, but as many portions of the walls have become dilapidated, there must have been far more than this number. There do not appear to have been any loopholes in the walls above the banquette walls, as possibly the banquette inside the main walls would enable anyone standing upon it to see over the main walls to the exterior of the building.

Banquette walls.—The general adoption of substantial banquette walls as a means of defence, in this and similar buildings in the Inyanga district, is somewhat striking, especially as their employment in certain old ruins in Southern Rhodesia, Inyanga excepted, is not very frequently met with. These walls are actually part of the main outer walls, and also of some of the divisional walls, but are only carried up to a height of 3 or 4 feet above the ground, thus forming an elevated terraced walk round the inside of the walls, which would enable the defenders, while occupying a protected position, to see over the main wall or to throw spears and missiles on to the enemy outside.

The original designers of the building evidently bore in mind the possibility of the outer and lower defended enclosures being captured by an enemy, for they have provided a further line of defence in a higher and central enclosure (No. IV), and this also has banquette, loopholes and small covered entrances overlooking and commanding enclosures Nos. I, III and V, while enclosures Nos. II and III have similar defences as against a possible hostile occupation of No. I enclosure. The redundancy and repetitions of such methods of defence, with their remarkable evidence of caution and foresight in the provision of successive lines of defence, demonstrates a knowledge of military tactics on the part of the designers which one cannot well conceive to be of purely native origin.

Absence of buttresses.—In these ruins, and in all others of the same class in this district, there is an entire absence of buttresses, either angular or rounded, which form such a prominent feature in the ordinary ruins of Matabeleland and Mashonaland. In such latter ruins the original builders extensively employed buttresses for the defence of entrances from attacks from the exterior, in order to provide shelter for the defenders. In the Inyanga forts the lowness, length, and narrowness of the entrance passages, together with the vantage ground over the interior of the exit provided by the banquette walls, evidently were the only means employed to protect the entrance, or to make its defence easy to the occupiers, while making the building difficult for the attacking party to force.

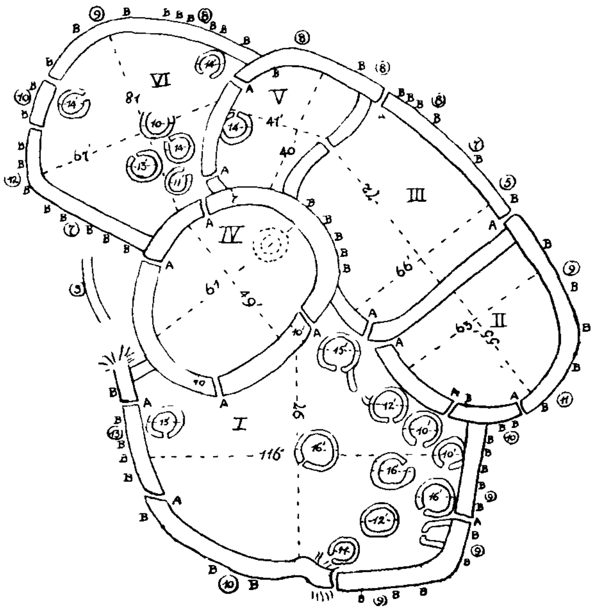

FIG. 1.—PLAN OF FORT, INYANGA.

Levels of floors of enclosures.—The ruins crown the top of the ridge on the summit of the hill, enclosure IV being on the highest and most central point. This is surrounded on all sides by enclosures, except for 50 feet on the west side, where there is a sharp declivity of the formation rock. All enclosures slope outwards and downwards from the central enclosure (IV) to the outer main walls of the ruins. The central enclosure (IV) thus overlooks and commands all the other enclosures. Its floor is practically level and is on the formation rock, the small natural plateau so enclosed being artificially extended by filling in soil and stones between the formation rock and the insides of its rampart walls. Its floor has an elevation above the highest and nearer portions of the surrounding enclosures to the following extent:—Above No. I, 4 feet; No. III, 5 feet; No. V, 4 feet; No. VI, 9 feet, and, overlooking the unenclosed space on the west side, 4 feet.

The floors of the enclosures surrounding the central and elevated enclosure IV slope outwards from the outer base of the wall of this enclosure to the inner base of the wall of their outer main walls as follows: No. I slopes 2 feet 6 inches in 91 feet towards the south-west; No. III slopes 5 feet in 65 feet towards the east; No. V slopes 6 feet in 40 feet towards the east-north-east; and No. VI slopes 9 feet in 81 feet towards the east, while No. II, which does not adjoin No. IV, slopes

2 feet in 63 feet from No. I enclosure towards the east-south-east. From all the outer main walls the hill has a sharp declivity, but mainly towards the north and south.

No. I Enclosure.—This is the most westerly enclosure, and its shape is irregular. The area is 116 feet from north to south, and 97 feet from east to west. It is bounded from south-south-east to north-north-east by enclosures II, III, and IV. The enclosure has nine covered entrances, and another can be traced in a gap on the west side. The entrance on the north-west side passes obliquely through the main wall. The present heights of the reduced walls are as follows: north, 8 feet; west, 9 feet; south, 11 feet; and east, 5 feet. The banquette or terraced wall runs round the inside of the outer main wall as follows: north side (part only), 2 feet to 4 feet wide, 4 feet high (very dilapidated); west side, 2 feet to 4 feet wide, 3 feet high; south-west, none; south-east, 2 feet wide, 2 feet high (traceable). The number of intact loop-holes are as follows: south side, eight; west, four; north, six; east, two; but others are traceable. In this enclosure are the remains of ten circular stone huts, with diameters varying from 12 feet to 18 feet (outside measurements).

No. II Enclosure.—This is the most southerly enclosure. The area is 63 feet from north-west to south-east, and 55 feet from south-west to north-east. It is bounded by No. I enclosure on the north-west, and by No. III enclosure on the north-east. The enclosure has two covered entrances on the north and one on the west, and more are traceable. The heights of the walls are: north and east, 8 feet; south, 6 feet; east, 4 feet. The banquette wall runs round the enclosure on its north, west and south sides. This averages in height 3 feet, with a width of from 2 feet to 3 feet. There are six loop-holes on the west side, none on the east, one on the north, and two on the south side. There are traces of one circular stone hut in this enclosure.

No. III Enclosure.—This is on the east side of the ruins, and is bounded on the south-west by No. II enclosure, north by No. IV, and north-east by No. V. The area is 72 feet from north-east to south-west, and 66 feet from south-east to north-west. There are three covered entrances to this enclosure, one on the north side and two on the north-east side. The heights of the walls are: south-east side, 5 feet to 7 feet: north-east, 4 feet to 8 feet; and north and west, 7 feet. A banquette wall, averaging 2 feet in width and 3 feet in height, is on the south and east sides only. There are seven loop-holes on the south-east and north-east sides, two on the west, and three on the north. No traces of circular stone huts are to be found.

No. IV Enclosure.—This is the central enclosure before referred to (see *Levels of Floors*), and it is bounded by Nos. I, III, V, and VI, and on the north side by an unenclosed space 49 feet wide. Its area is 61 feet from north-east to south-east, and 49 feet from north-east to south-west. There are two entrances on the west side, and one each on the north and east sides. The present greatly reduced heights of the walls are: south-west, 4 feet; north-east, 3 feet: south-east, 3 feet; and north-west, 5 feet. There are remains of banquette walls, from 2 feet to 5 feet wide and 3 feet high, round some portions, and in other parts the banquette work is very dilapidated. Some twelve loop-holes are distributed round the enclosure. The enclosure contains traces of one circular stone hut.

No. V Enclosure.—The area of this enclosure is 41 feet from north to south, and 40 feet from east to west. There are two covered entrances, one on the north and the other on the west side. The average heights of the walls are: west, 7 feet; north, 4 feet; east, 5 feet to 7 feet; and south, 7 feet. A banquette wall runs along the east side, and this is from 2 feet to 3 feet in width. Traces of one circular stone hut are to be found.

No. VI Enclosure.—This is the most north-easterly portion of the ruins. The area is 67 feet from north to south, and 81 feet from east to west. There are five covered passages in this enclosure, and twenty loop-holes through, while banquette walls are on its outer walls.

STONE-LINED PITS ON THE INYANGA ESTATE, MASHONALAND.

These structures, which are so numerous throughout the whole of the Inyanga Range, are proportionately numerous on Mr. Rhodes' estate. For instance, within the small radius of two miles only from the farmstead, there can be no less than one hundred of these pits and passages, if not very considerably more. This is thought to be a modest estimate, yet it serves to demonstrate the vast number of such pits which are to be found distributed, in similar, if not in greater, proportion, throughout an area of hill country some 60 miles in length by 40 miles in width.

Generally the pits are found in clusters of twos and threes, or singly at 100 yards distance, but sometimes at a distance of 50 yards apart. Their position can be ascertained from a distance, for wherever a clump of large trees is to be seen breaking the view on the downs and lower hillsides, there is almost certain to be found one of these pits, and the trees on being approached will invariably prove to be figs of great girth growing on the floors or from the wall-masonry of the pit. The wood of this kind of fig is soft, the trees though tall and gnarled are not of very great age, and are probably the descendants of similar trees which once grew even more plentifully over this district than they do to-day. The presence of these trees in and near the pits is most striking.

The majority of the pits are either dilapidated or almost completely filled with silted soil from higher ground, and only one in twenty is in such a state of preservation as to admit of even partial examination. A pit in an almost perfect condition, undamaged and unfilled, is only met with in this district at rare intervals.

The pits are mostly found on the gentle slopes of low hills, also along the upper ridges of rolling downs where the soil is of a bright red gravelly nature. This is shown in the numerous narrow and deep gorges which run from kloof-like positions on the sides of the hills to the streams at the base. These deep cuttings appear to have been scoured out in some past age by waterspouts, for the great majority start from the top at spots which are waterless. The precipitous sides of these gorges bear rich red soil at least 20 feet deep, with thin horizontal strata of clay stone, very much resembling soapstone, which the natives use as material for carving, while at the bottom of these gorges water has exposed large rounded boulders of blue slate.

The original builders have sunk their pits some 9 feet to 12 feet in depth, with diameters varying from 16 feet to 30 feet. The soil from each pit has been thrown up on the hillside, making a semicircular rampart of some 20 feet to 30 feet in width, which increased the depth of the pit on the outer side, making the height of that side of the pit correspond with that of the higher ground on the hillside of the excavation. Where pits have been sunk on practically level ground the excavated soil has been piled all round, forming a rampart of equal width, thus bringing the top edge of the coping stones of the pit to a level slightly above that of the surrounding veldt.

Inside the pit, and forming a lining, a circular wall was built up to the height of the earth rampart, where a coping of much larger stones, well fitted together, was made. This firmly binds the summit of the wall all round the pit. The wall is a facing of single stones only, and some of the long stones, which are built in lengthways from front to back, run from the face of the wall right into the soil behind. The appearance of these walls, which in many instances and for several reasons have partially collapsed into the pit, shows that, at several stages in the building of the wall, soil was dragged down and rammed into the space behind the wall, for unless this had been done these long and heavy stones, without some support, would have levered out the face of the wall. The effect of this occasional arrangement of larger stones would naturally be to bind the wall and render the perpendicular lining and single blocks of irregular size and shape less liable to collapse inwards. The builders of these walls made no attempt to build in courses, as stones of all sizes and shapes were employed, causing large gaps and chinks which were filled in with smaller fragments. In no single instance has there been found the slightest evidence of any building stone having been worked.

When the pit was excavated a cutting was made in the soil some 30 feet long, usually on the higher side of the pit, from its interior at the base to within 4 feet of the ground at its outer and upper extremity. The length of the passage from end to end in a direct line is usually about 26 feet, the length of 30 feet being reduced by a curve invariably present in these passages. Standing in the pit and looking along the passage the curve is found to correspond, in most instances, to the left hand upper quarter section of a circle. The close similarity between the length of the curve and its direction, and the relative position of the passage to the pit, are most remarkable. Possibly this was intentional, in order to place the outer entrance to the passage to the lee-side, where it was protected from the prevailing cold winds and rains, in the same way that to-day the position of hut doors is fixed with the purpose of avoiding exposure to the prevailing winds and rains.

After the construction of this passage it was paved throughout with slabs of stones, on which and on either side parallel walls of single stones were built to an average height of 3 feet above the paving, with a space of 2 feet 2 inches to 2 feet

8 inches between them. The passage was then covered over with large stone beams placed close together throughout its whole length, except at a point about 10 feet from the pit, where, in almost every instance of such pits in this locality, there is an aperture or ventilating shaft some 14 inches wide in the roof of the gallery or passage.

The similarly relative position of these apertures in the passage roofs in so very many pits is also extremely striking. The floor of the passage where it enters the pit is from 6 inches to 12 inches above the stone pavement of the pit. The fall in the passage floor averages 8 inches to 12 inches in 10 feet.

No steps have so far been found inside these passages, but in the circular space enclosing the upper entrance, which is very frequently formed by the continuation of the outer wall, there are often two or three shallow steps leading down from the floor of the circular space to the floor of the passage. The object of this circular space appears to have been to prevent rain water from the higher ground running in to the passage, and thence into the pit. This circular chamber is deeper by 2 feet or 3 feet than any other of the circular enclosures of stone built on the upper edges of the pit, which evidently form part of the original structure, and it seems to have served as a vestibule to the passage and pit.

After the completion of the passage roof, one or two layers of large stones were piled so as to cover the cross beams, and these extended for some distance on either side, thus completely burying the passage. On this paved floor was another circular enclosure of stone, some 20 feet in diameter (external measurements), and in the floor of this enclosure is almost sure to be found the ventilating hole into the passage below. This enclosure, containing the ventilating shaft, occupied the space between the vestibule and the pit, reaching to within 3 or 4 feet of the edge of the latter.

The rampart of soil from the pit was supported on the outer and down side by a semicircular retaining wall, providing a flat surface round the pit. The retaining walls vary from 3 feet to 6 feet in height, according to the slope of the side of the hill. Frequently there are two retaining walls, one above and at the back of the other. The surface of the rampart was in almost every instance paved, and on it one of two different classes of structures was raised: (1) Ordinary stone huts, as made by natives in Mashonaland, with diameters varying from 10 to 18 feet, and walls still standing 2 feet high. One half of each floor is paved, the other half is a raised floor of *daga* (clay) with a raised rim of *daga*. The huts are thus divided into two parts, one for the family and the other for the goats. Only very common native articles, of to-day's make and use, have so far been found in those huts. (2) Stone foundations of granaries similar to those made by natives of to-day. These are formed by erecting stones in a vertical position to carry a floor of other flat-stones, which are placed from point to point of the vertical stones, thus making a raised floor with an open space underneath. On this floor was laid a *daga* floor of about 6 feet in diameter (exterior measurement), and a *daga* and thick granary was built up, exactly similar to those seen in many hundreds of villages to-day, with the sticks in some instances still standing upright in the *daga.*

The number of circular enclosures built on the ramparts of these pits varies considerably. At some pits only two are found, and these are the enclosures containing the ventilator and the upper entrance to the passage. At other pits as many as six or eight circular enclosures are definitely traceable, but in the majority of instances four or five enclosures only have existed.

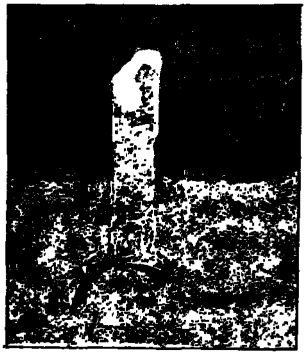

FIG. 2.—MONOLITH NEAR "SLAVE-PIT," INYANGA.

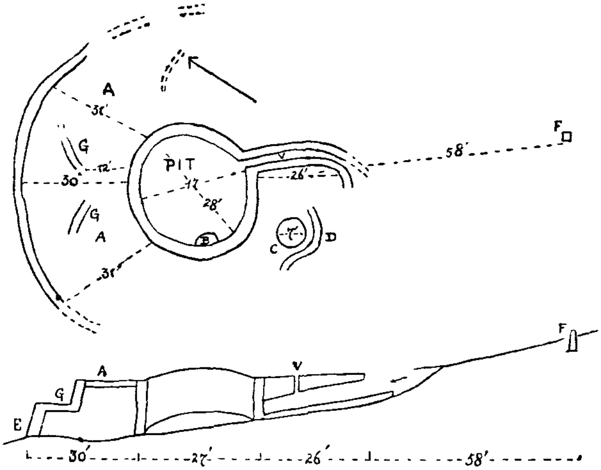

FIG. 3.—PLAN AND SECTION OF PIT II.

With regard to the age of these circular enclosures (excepting the enclosures with the ventilator and passage entrance respectively, which appear to form part of the original structure), some are most obviously of later construction than the pit; others bear a striking similarity in workmanship to that displayed in the construction of both pit and passage, while it must not be forgotten that it is a common practice among the natives on moving the site of their kraals to build their huts round such pits as may be still in a fair state of preservation, and use the pit for their goat and sheep kraal. Instances of this practice can be seen in this locality.

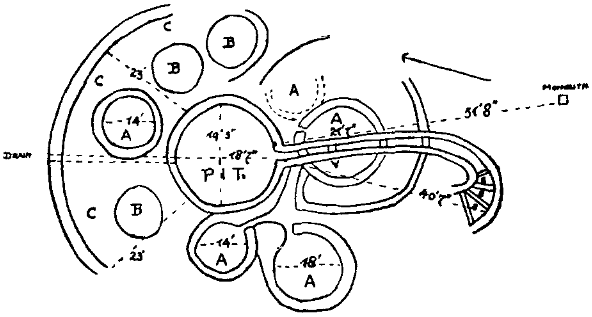

FIG. 4.—PLAN OF PIT I.

In several pits a drain will be found running through the rampart out on to the veld below. This drain faces the entrance to the pit, and is at the lowest point of its paved floor. On the outside of the rampart, where the drain emerges, a deep depression in the earth some yards long runs outward to the lower ground. It is believed that such a drain will be found in every pit.

The floors of the pits are paved with close fitting stones sloping from the entrance of the passage towards the drain on the opposite side, the fall averaging 6 inches in 10 feet. The paving stones are laid on the surface left by the excavators of the pit, and experience has shown that there is nothing to be found on removing any of the paving stones and digging beneath them.

A curious feature connected with these pits is the erection near some of them of a plain stone beam or monolith (Fig. 2), which averages 2 feet 6 inches to 3 feet 6 inches above the ground, into which it is fixed with stones. On higher ground, at a few yards distance, there is generally a retaining wall, sometimes 50 yards in length. These upright stones which occupy isolated positions stand at 50 feet to 60 feet distance on the higher side of the pit. In two instances the distances from the pit and positions of these monoliths are respectively as follows: 51 feet 8 inches south south-east of pit, and 58 feet south south-east of the pit.

In these structures the walls of both pits and passages are perpendicular, and portcullis grooves in the entrances are altogether absent.

At No. I pit a flat stone with straight sides 4 feet 4 inches long, 1 foot 6 inches wide, and 9 inches deep, lies at the outer entrance of the passage. This appears to have been moved aside from the passage entrance, which it fits as if it had once been used to close it up. Its trim sides and measurements corresponding with those of the entrance, and its present position at the entrance, appear to prove that such was the purpose of the slab of stone. At some other pits similar stones have been found in similar positions.

Measurements.

	Pit I.	Pit II.	Pit III.	Pit IV.
	ft. in.	ft. in.	ft. in.	ft. in.
Diameter N. to S.	18 7	28 0	16 0	13 0
„ E. to W.	19 3	27 0	16 0	12 6
Depth N.	10 0	7 0	7 0	Not cleared.
„ S.	8 3	6 0	8 0	—
Passage, length...	40 7	30 0	30 0 once longer	31 0
Direction	S.	S.	S.E.	S.S.E.
Width...	2 2 to 2 8	2 4	2 1	2 4
Height	3 2	3 3	3 3	3 5
Width of rampart	23 0	31 0	26 0	20 0
Number of stone hut foundations	4	Traces only	4	Traces
Number of granary foundations	3	1	—	No trace
Position of monoliths	S.S.E. 51 ft. 8 in.	S.S.E. 58 ft.	S.S.E. site only	—

POSITION OF PITS.

Pit I. Near huts and sheep pen east of farmstead.
„ II. On face of bank behind old plantation of blue gums.
„ III. In paddock near fence south of gate at approach to farmstead.
„ IV. Twenty yards east of farmstead house.

OLD AQUEDUCTS.

One of the most extraordinary features of the Inyanga Range is the vast number of old aqueducts, some two miles or more in length, running from artificial dams on the mountain streams, and crossing from hill to hill in a most remarkable manner.

Whoever constructed these aqueducts must have been a people thoroughly conversant with engineering, for their levels are beautifully and exactly carried out in spite of all natural obstacles, and not an inch of fall is wasted throughout the length of their courses. These are a marvel to all modern engineers who inspect them. Evidently they were used for purposes of irrigation. The hardest material pierced in their construction appears to have been shale or clay stone.

They are all about 16 to 24 inches wide, and are about 2 feet in depth. They have no paving or built sides.

HILL TERRACES.

Perhaps the feature which most strikes the visitor to this district is the hill terraces. These are found in hundreds throughout Inyanga.

These terraces cover the hills from base to summit, but mainly on their northern side. As many as forty terraces, one above and behind the other, are to be found on any one hill. Most of these have earth behind them, but from the inner sides of some the soil has in the course of time been washed away. They have retaining walls, and most probably were used for horticultural purposes. Hill terraces also occupy a small area as far south as Swaziland, while similar hill terraces are found in South Arabia.

Many of the trees found in this area, wild vines, figs and lemons, are not indigenous to South-East Africa.

Explanation of Figures in Text.

Fig. 1. Plan of fort. AA, covered entrances ; BB, loopholes. The figures in circles are heights of walls.

Fig. 2. See p. 100.

Fig. 3. Plan and section of Pit II. A, paved rampart ; B, tree ; C, floor of native granary D, native-built wall ; E, outer and lower retaining wall ; F, monolith ; G, upper retaining wall ; V, ventilators.

Fig. 4. Plan of Pit I. A, Foundations of Circular Stone Huts. B, Foundations of Granaries. C, Rampart. SS, Traces of Steps. V, Ventilator.

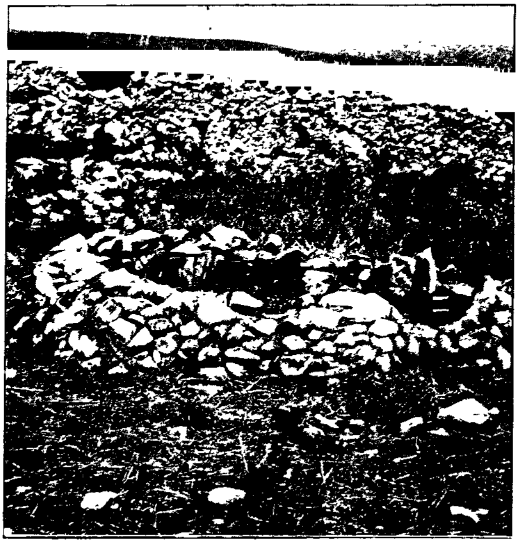

FIG. 1.—REMAINS OF CIRCULAR STONE HUTS, INYANGA FORT.

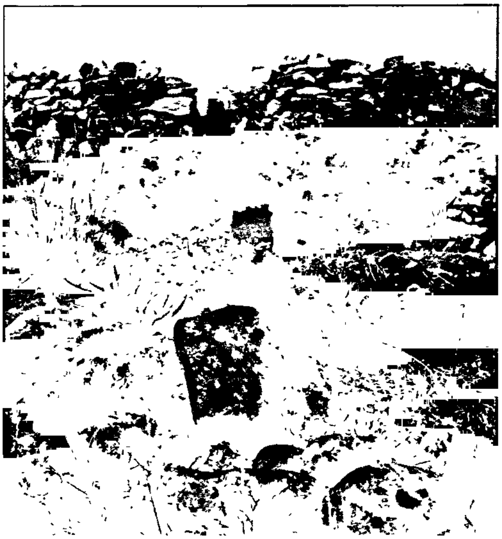

FIG. 2.—INTERIOR OF MAIN WALL, INYANGA FORT, SHOWING ENTRANCE.

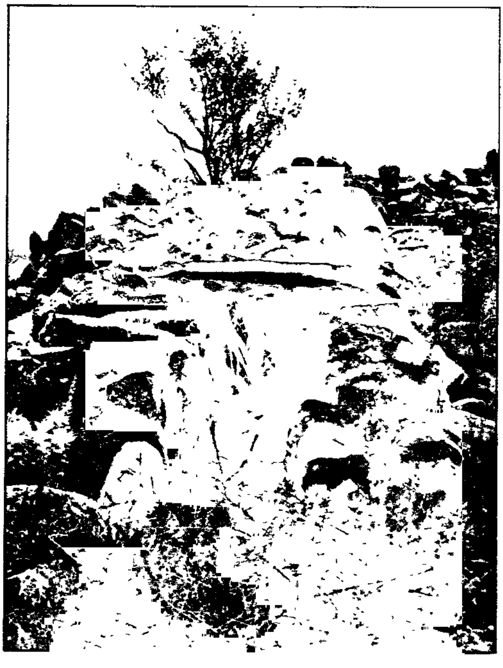

FIG. 3.—COVERED ENTRANCE, 17 FEET LONG, IN WICKLOW RUIN, INYANGA.

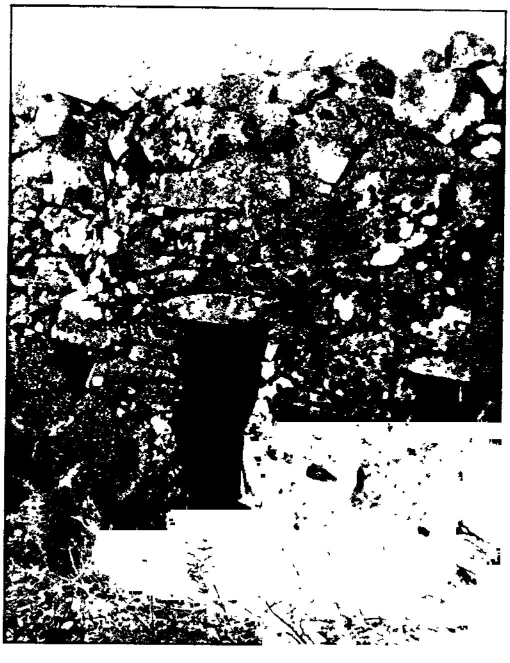

FIG. 4.—COVERED ENTRANCE AND LOOPHOLES IN INYANGA FORT.

FORT AND STONE-LINED PITS AT INYANGA.

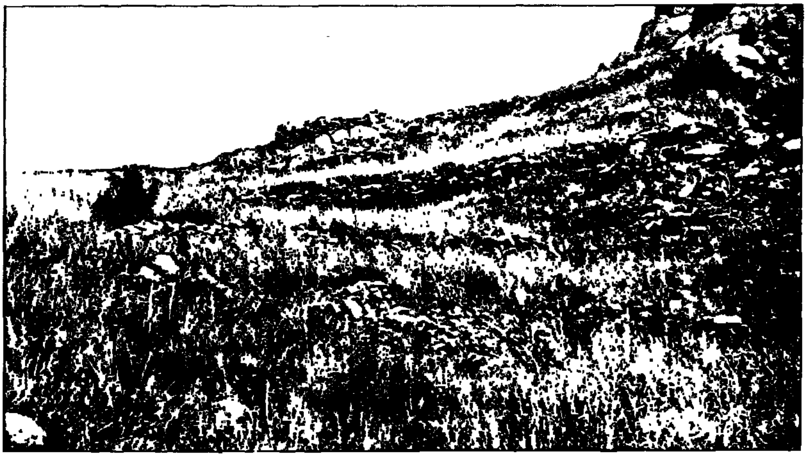

FIG. 1.—HILL TERRACES, INYANGA.

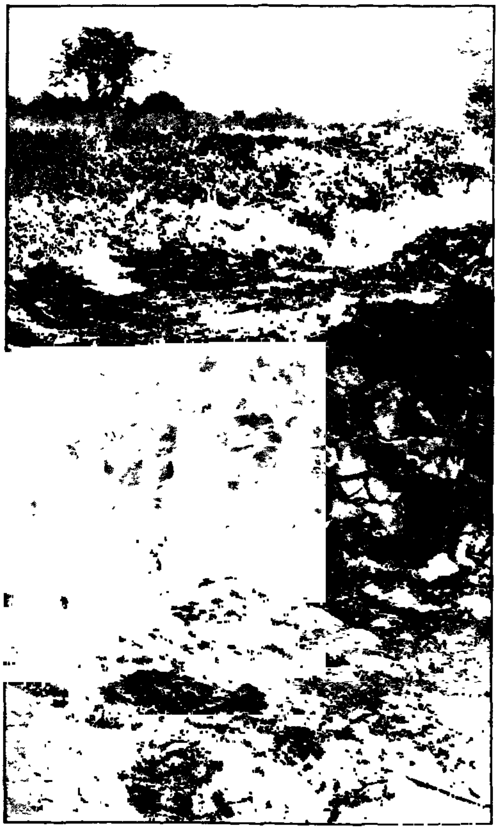

FIG. 2.—ENTRANCE TO PASSAGE LEADING INTO STONE-LINED PIT, HOMESTEAD, INYANGA.

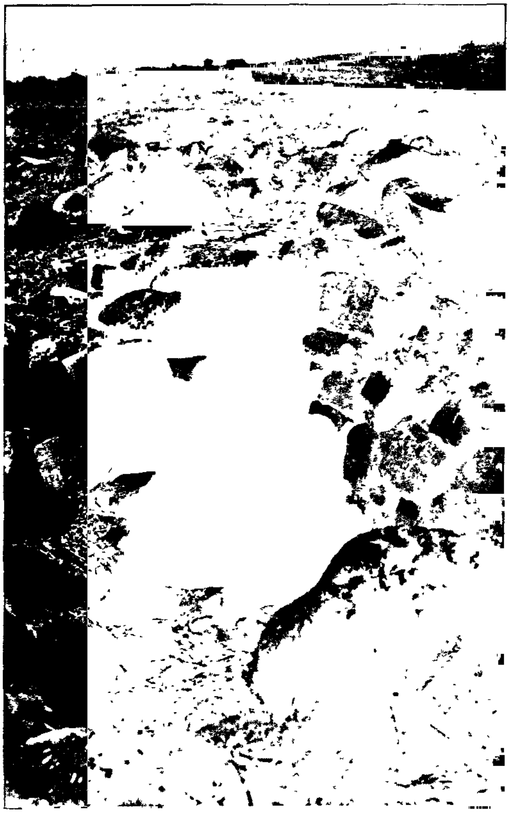

FIG. 3.—EXTERIOR OF ENTRANCE, WEST PASSAGE, LEADING INTO STONE-LINED PIT, HOMESTEAD, INYANGA.

FORT AND STONE-LINED PITS AT INYANGA.

THE ANCIENT MONUMENTS OF NORTHERN HONDURAS AND THE ADJACENT PARTS OF YUCATAN AND GUATEMALA, THE FORMER CIVILISATION IN THESE PARTS, AND THE CHIEF CHARACTERISTICS OF THE RACES NOW INHABITING THEM; WITH AN ACCOUNT OF A VISIT TO THE RIO GRANDE RUINS.

By T. W. Gann, M.D.

Little or nothing is known of the early history of the inhabitants of this part of Central America; all we know definitely is that they are a branch of the great Maya Toltec race, who, entering the valley of Mexico towards the end of the seventh century, left it again towards the end of the eleventh, to migrate southward as far as Spanish Honduras, leaving traces of their civilisation in the ruined cities of Yucatan, Southern Mexico, and Honduras, all of which, it seems probable, were at the time of the conquest already in ruins.

Ancient Monuments.—The monuments left by the ancient inhabitants are temples, buildings within mounds, stelæ, stone-faced pyramids, fortifications, ovoid underground chambers.

In this part of Central America, owing probably to the fact that there are no roads, and that the greater part of the country is practically unexplored, only three temple-like buildings have as yet been discovered; two of these are completely ruined, but the third, with its solid foundations, long narrow cells, and typical American arches, is a good specimen of Toltec architecture. It stands upon an artificial mound nearly 40 feet in height, and consisted originally of three stories, the uppermost of which is now completely in ruins. Each story contained nine small hollow chambers 12 feet × 5 feet × 7 feet in height, the roof of each was arched and was formed by superimposed layers of large flag-stones, each layer projecting slightly inwards on either side, beyond the one immediately beneath it, the open space at the summit being covered with large broad flags.

Toltec buildings are invariably roofed in this way, as the architects, notwithstanding the vast and imposing structures which they erected, never appear to have mastered the principle of the arch.

Buildings within mounds.—Two perfectly distinct kinds of building are found buried within mounds in Honduras, namely, temples in a more or less ruinous condition, and burial cysts and chambers, either single or multiple. As a rule the temples are the merest ruins, little more than the foundation remaining, the rest of the building having apparently been utilised in erecting the mound which covers it; there are however two exceptions, one situated at Sta. Rita, the other at Pueblo Nuevo, both in British Honduras. The Sta. Rita temple was covered by a mound 14 feet high by 80 feet in length by 66 feet in breadth, its north wall, 35 feet 8 inches in length, was perfect throughout to the height of a cornice 4 feet 10 inches from the ground; of the west wall 9 feet remained standing, and of the last wall 4 feet. Each of these walls was covered with hieroglyphics, and richly decorated human figures painted in bright colours upon a smooth hard stucco. The pictograph upon the last wall, representing a battle scene, was unfortunately torn down in the night and carried away piecemeal for use as medicine by some Indians; it probably represented one of the numerous skirmishes which must have taken place between the Toltecs and the invading Aztecs. Upon the north wall are depicted a long line of bound captives, and upon the west wall some of the heads of these are being offered upon the altar of the Mexican God of War.

Of the mounds as yet examined in this part of Central America fully 50 per cent. are sepulchral, and of these about one-third contain either small burial cysts (sometimes single, sometimes three or four in a mound) or burial chambers of considerable size. Not far from Platon, on the Rio Niopau, one of these mounds was partially washed away by an unusually high flood in the river, exposing the outer wall of a small chamber; this was easily opened, and within were found two skeletons, in a recumbent posture. The chamber was 8 feet by 5 feet by 6 feet high, the floor was made of hardened earth, and it contained no ornaments, pottery or weapons; the most curious fact, however, was that two of the large squared stones which formed the inner wall of the chamber had been removed from their places, and were lying upon the floor; it seemed almost impossible for the original builder of the mound to have removed the stones in this way, and the only explanation which offered itself to me, was that the two unfortunate individuals had been inhumed alive, either by way of a punishment or a sacrifice, and that in desperation, one or both of them had tried to make an exit through the solid wall before death overtook them.

Stone-faced Pyramids.—Small stone-faced pyramids, varying from 8 feet to 20 feet in height, are fairly widely distributed; these however, from the action of rain and the growth of trees, are usually in a very ruinous condition; the ruins, however, recently discovered by some black wood-cutters near the head waters of the Columbia branch of the Rio Grande, in the south of British Honduras, which I visited a few months ago, are in a wonderful state of preservation.

Surrounded on all sides by virgin bush, stands a great platform 900 feet in length, 210 feet in breadth, and from 5 to 15 feet in height, faced on all sides by nicely cut stone; across the centre of this passes a second platform 300 feet in breadth, and 2½ feet high, also faced throughout with stone; upon this second terrace are placed six terraced stone-faced mounds, the largest being 31 yards square by 33 feet in height, and possessing four terraces, all these mounds are in a good state of preservation; upon the summit of each is a heap of ruins, probably representing all that remains of a small temple which once stood there. Upon the larger terrace were also great numbers of mounds covered with worked stone, but all in ruins. We excavated one or two of the smaller mounds, and found the centres filled with irregular fragments of hard red brick; flat tiles of the same brick had also been used for paving purposes. The quarrying of these stones, the working of them (both done with flint implements alone), the removal of them to their present location, and the building of the pyramids, must have been a gigantic undertaking, and goes to show that this now desolate place must once have supported a very large population.

Ovoid underground Chambers are found in considerable numbers throughout the whole district, usually in the vicinity of mounds. They are cut out of the limestone rock, entered from above by narrow openings and short flights of steps, and vary from 15 feet to 30 feet in length by about 6 feet in height at the centre; occasionally they show signs of having been covered with stucco. They were probably used as granaries, and not, as was at one time supposed, as water reservoirs, for one frequently finds them close to good fresh water supplies. In a few cases they have been converted into burial chambers, but this was obviously not the use for which they were originally intended.

Former Civilisation.—Of the former civilisation in this region we know little beyond what is revealed by the ruins, and contents of burial and other mounds. Of the objects obtained from these latter; weapons, and tools of flint, chert, obsidian, jadite, granite, etc., formed by far the larger proportion. Spear and arrow heads, knives, hammer stones, and scrapers of flint and obsidian, Celts of granite and jadite, loom weights, sling stones, net sinkers, and henequen cleaners of compact limestone, and corn grinders of Esquipulas stone are all of common occurrence.

The almost complete absence of any kind of metal objects from this district is remarkable, and very difficult to explain, as the inhabitants must have had considerable traffic with the Mexicans on the north, amongst whom gold, silver, and bronze were in common use; moreover alluvial gold is to be found in considerable quantities over the region itself.

Pottery—The pottery found may be divided into three main groups. (1) Fine thin ware, painted in various colours, decorated with well drawn devices, and glazed, (2) A coarser red ware, also glazed, used in the manufacture of "tinajas," and common household utensils, and (3) Rough, thick, unpainted, unglazed ware, used chiefly in the manufacture of sepulchral wares, "incensarios" and ceremonial animal effigies for burial with the dead.

The fine thin ware is frequently decorated with human and animal effigies, and (probably) explanatory hieroglyphics. The very coarse, often sun baked pottery, was used almost exclusively in the manufacture of the curious hour glass shaped incensarios, decorated externally with the head, or sometimes with the whole figure, of the god to whom they were dedicated, which, though now extremely rare, were probably at one time to be found lying on the summit of every burial mound.

Burial customs.—Almost every variety of burial is to be found within this district; probably the commonest of all was earth burial, either in the sitting or recumbent posture, with a few possessions, such as clay beads, arrow heads, and obsidian knives. As no mound was erected to mark the spot, one does not very frequently encounter this class of burial, but there can be little doubt that all the poorer people were interred in this way. Cyst burial was very prevalent, the cyst, except where old subterraneous granaries had been converted into burial chambers, being invariably covered by a mound. Secondary burial appears to have been practised not infrequently, as large collections of bones of men, women, and children are occasionally found mixed indiscriminately together. Partially calcined human bones are sometimes found, usually contained within a rude pottery urn. The objects buried with the dead include ornaments, toys, weapons, household utensils, ceremonial objects and idols; with the exception of the idols and clay images of the gods, which are invariably broken, and the pieces scattered, all these objects are as a rule whole and uninjured.

Hierogylphics and pictographs are of wide occurrence, painted on stucco and pottery, graven on stone, shell, stucco, and clay. They are practically identical with those found in the ruins and mounds of Southern Mexico, Yucatan, Guatemala, and Spanish Honduras, and were undoubtedly the work of the same race. No satisfactory key has as yet been found for these glyphs, but the probability is that they record, not the prominent events in the history of the nation, or in the lives of its notable men, but merely the dates of various feasts, sacrifices, and their religious ceremonies.

Religion.—The three principal gods of the Maya pantheon were Cuculcan, the Quetzacoatl of the Aztecs, Tlaloc, the rain god, and Itzamna; there were beneficent deities, but there were in addition malevolent deities, and a host of minor gods and goddesses. The Toltec religion appears at first to have been mild and beneficent; sacrifices of fruit, flowers, and similar objects alone being made to the gods, but there can be little doubt, from the evidence of the mounds and paintings, that at some period in their history human sacrifice became prevalent; whether acquired from the savage Aztecs, or from the barbarous tribes with whom during their long migration they must have come in contact, it is impossible to say.

Present inhabitants.—The Maya Indians of the present day, when of unmixed blood, are on the whole physically a fine race. Their stature is small, the males averaging about 5 feet 5 inches, the females about 1 inch less, but they are well knit, muscular, hardy, and capable of considerable and prolonged exertion. The hair is long, black, and straight, the complexion a light olive colour, the hands and feet small and well made, the features regular and clearly cut; indeed even from an European point of view many of the women would be considered exceedingly handsome. Both men and women are extremely intelligent. The measurements of a fairly typical modern Maya cranium are as follows:—

Circumference of cranium	... ...	$19\frac{6}{8}$ inches.
Length " "	... ...	$6\frac{5}{8}$ "
Breadth " "	... ...	$5\frac{5}{8}$ "

The skull is rather markedly brachycephalic, the cephalic index being 85 pproximating very closely in this particular to the Mongolian type.

Height of cranium	. . ..	$4\frac{5}{8}$ inches.
Index of height ...	... ...	70.
Alveolar index ...	... ...	103.
Nasal index ...	... ...	51.
Orbital index ...	... ...	91.

In judging the alveolar index, some allowance must be made for the fact that in this individual the upper incisors and canines were unusually prominent. It will be seen that this skull approximates very closely in every measurement, except that of height, to the typical Mongolian skull, a fact considerably favouring the theory that the Toltecs, Aztecs, and other allied tribes were all originally of Mongolian origin. I have not, unfortunately, had the opportunity of measuring many undoubtedly Maya skulls, as, though the Indians have not the least objection to exhume the remains of their remoter ancestors from their mound graves, they bitterly resent any interference with the little cleared spaces in the bush which they use as cemeteries at the present day.

The Indian is very fond of his children up to the age of twelve or thirteen years, when they are practically grown up, but after this parents and children take but little interest in each other's welfare. The marriage tie (if such it can be called) sits loosely on both parties, and is broken on the slightest provocation, or without provocation at all, by either or each seeking a fresh, and therefore more congenial partner, of whom each again probably quickly tires and takes leave. One curious point about the Maya, which he also has in common with the Mongolian, is his utter indifference to dissolution, in whatever form or way it may come; indeed it would sometimes appear that they rather welcomed death than otherwise; this being so, it is only natural that human life should be regarded very cheaply, and taken without much compunction.

Language.—The Maya language is practically universal throughout the whole district, with the exception of a few small Carib settlements in the south; it has altered remarkably little since the Conquest, though many Spanish words have been introduced, from time to time, to express objects and concepts previously unknown to the Mayas. In a very few instances Maya names have been coined for objects of common use and general distribution introduced after the Conquest.

Owing to the fine work done by the Roman Catholic Fathers, great numbers of the Indians have become Christians; many, however, are in a transitional state between Christianity and their ancient religion, others have partially relapsed into idolatry, whilst others again, such as the Lacondones, worship the same gods as their ancestors worshipped before the Conquest. The Santa Cruz, one of the largest tribes of pure Indians remaining in Yucatan, were originally under the Spanish dominion, and nominally Christians; they, however, massacred every Spaniard in their country, and set up a government under elected chiefs of their own; after a number of years, they also evolved a new and original religion, which consisted in the worship of a great wooden cross; this was attended by a highly elaborate ritual, for the performance of which special priests were chosen; little however has been learnt of it by outsiders, for, whenever an unwelcome stranger (and practically every stranger was unwelcome) entered their country, he was at once conducted to the chief, and by him, to the home of the cross. Now the cross was regarded as an oracle (as a voice was said to issue from it when questioned) and was consulted by the chief or chief priest regarding the fate of the a stranger; needless to say the latter was rarely heard of again. The mode of execution was usually, first by every possible means to lull the suspicion of the condemned person, then, taking him unawares (when asleep at night if possible), to dispatch him by chopping with machetes.

The Lacondones, the remotest tribe of whom anything is known, still worship, in the ruined temples of their ancestors, their ancient gods; they still manufacture the curious hour-glass shaped incensarios of rough pottery, with the head or figure of the god outside, in which they burn copal incense, and one explorer has seen freshly cut and painted rock carvings, done by them, exactly similar to those found in the caves and ruins of Yucatan.

Native Arts and Agriculture.—The Indian's wants are simple and easily supplied, his arts are correspondingly few, and his agriculture primitive. Amongst the Indians in touch with civilisation cotton goods are easily obtainable, consequently weaving has become a lost art; though the very remote tribes still manufacture a coarse cotton cloth, which they make into garments, decorating these very tastefully with various devices in bright colours.

Spinning is still carried on in the ancient way. A spindle about 9 inches in length is weighted about 3 inches from its lower end (often with one of the pottery malaeates to be picked up in numbers on any ancient village site) which is placed in a small shallow bowl, the upper end being rotated rapidly with the right hand, whilst the cotton is fed with the left.

Pottery-making is also carried out in the old primitive way. A fine yellow clay, mixed with powdered gourd, or granite, being moistened and kneaded to the proper consistency, is moulded by hand into a rough, thick-walled vessel, of the size and shape required. A potter's wheel is never used, but considerable skill, and not a little taste, are frequently shown in the moulding and ornamentation of these rough vessels, which are subsequently fired by being placed in the centre of a great heap of glowing charcoal.

Flint chipping is now practically a lost art, as only the very remote Indians retain the bow and arrow; the arrow heads, which are little more than chips of flint, are of excessively rude and primitive construction.

Influence of Civilisation.—Civilisation, from the Conquest, appears to have brought nothing but evil in its train to the aboriginal inhabitants. The peninsula of Yucatan, at the time of the Conquest, was estimated to support a population of several millions, whereas at the present day there are not more than a few hundred thousand remaining. In the early days of the Conquistadores, when the natives had to choose between the new religion and the sword or the stake, and when death was far preferable to the life of unremitting and unaccustomed toil, which was the lot of every repartamientoed Indian, such a decimation is easily understandable, but since then, up to the present day, the Maya race has been, and is even still, gradually dying out. This is due probably to a number of causes, chief amongst which are :—

1. The introduction of a variety of epidemic diseases, such as small-pox, scarlet fever, whooping cough, and yellow fever, all of which are especially fatal to the Indian, whole villages often being completely exterminated by an epidemic of small-pox.

2. Alcohol has undoubtedly proved one of the worst scourges introduced by civilisation; the average Indian, if he has a "real," and can procure rum, will find the temptation to do so irresistible. I have seen a little Indian girl, of sixteen or seventeen years, go into a liquor store, buy a half pint bottle of over-proof rum, come out on the plaza, drink the whole down from the mouth of the bottle, and within ten minutes become perfectly comatose; nor is this an uncommon experience, for from childhood to old age the Indian is a slave to liquor.

3. The settlement of whites, and especially of negroes, in the Indian villages, is always to be deplored, is generally disliked by the Indians themselves, and, amongst independent tribes, is hardly ever permitted. The Indian has learnt by bitter experience, that the negro or white man, who is willing to give up civilisation for a primitive life in the bush, usually belongs to that class which is compelled to leave even the fringe of civilisation for extremely cogent reasons. Such a man as this amongst primitive and easily influenced people, can and usually does work incalculable and irremediable harm.

VISIT TO THE RIO GRANDE RUINS.

On Thursday, April 16th, I left Punta Gorda in company with Mr. Phillips, the District Commissioner, and after about an hour's ride we arrived at the Rio Jacinto, where we were met by our six men whom we had sent forward the previous evening with the heavy baggage. Everything was packed in two large doreys, and, with only half-an-hour's delay, we set out. Twenty minutes' good paddling brought us to the main stream of the Rio Grande, and for about fifteen miles we paddled up this river without meeting any obstruction. The stream is very tortuous, but its general direction is almost due east and west. Our first difficulty was at Corona falls, where the water was only 12 inches deep at the shallowest part of the run. About one mile above this is Castillo bank, an old mahogany cutting station of two years ago; this is regarded as about half-way to the mouth of the Columbia branch, though, owing to the upper half containing nearly twenty falls, it takes fully twice as long to traverse. The banks of the river here are from 20 feet to 30 feet in height, and composed of a soft friable sandstone, varying from light yellow to nearly black in colour where the stone has been much weathered. A few miles further up we passed Indian Creek, opening on the left bank of the river, but at this season of the year almost dry. About a mile higher up we came to "Cuchara," or Spoon falls, most appropriately named, as the only passage for the doreys was through a spoon-shaped passage in a high ledge of rock, which completely crossed the river. We were all compelled to leave the doreys and take out the heavier articles, and, even thus lightened it was as much as the men could do to haul them over. Immediately above this fall are Hicatu and Aqua Laticute Creek, both opening on the right bank, the one running north-west, the other north-east. A couple of miles higher we heard the roar of Big falls, and soon had the doreys engaged in this, the highest fall in the river. It is really double, the upper part being 2½ feet and the lower 1½ feet in height, with a flat ledge separating them. Three miles above Big Falls we arrived at Mr. Watson's mahogany bank, where we spent the night, having passed, during the day, twenty-three falls and runs, great and small, in our passage up the river. Next morning we set out about 6 a.m. in a single large dorey, and after paddling five miles, and crossing several small runs, we came to the mouth of the Columbia, the largest branch of the Rio Grande, opening on the left bank of the main stream, and running about west-south-west. The mouth is 15 yards across, but was completely blocked up by large tree trunks and other floating rubbish, the river at this time of the year being quite impassable, even for the smallest boats.

Three miles above the mouth of the Columbia we came to Hunterman's camp, an old mahogany cutting station, where we disembarked all our cargo, and, making it up as neatly as possible into six loads, started on foot along an old trunk pass to try and find the ruins. After about five miles walking, we struck the Columbia branch at what was supposed by former visitors to have been a wharf or landing stage connected with the ruins; and indeed, from a superficial examination, one might easily fall into the error, for a perfectly flat, table-like expanse of rock, having a breadth of about 15 yards, extends from the perpendicular stone bank to the water's edge; this is split up in all directions by fissures running at right angles to each other, giving it the appearance of a floor composed of huge flat stones carefully laid by human agency. As it was getting dusk, we pitched our camp close to the river and next morning set out for the ruins, which, after some difficulty, we found at a distance of about one and a-half miles from the nearest point of the Columbia. They consist of two great stone-faced terraces, upon which stand a number of stone-faced mounds. The lower terrace is slightly over 300 yards in length by 70 yards in breadth, and is faced with stone throughout its whole extent. In the centre of this is a smaller terrace, also faced with cut stone, of an uniform height of 2½ feet, 100 yards in breadth, and running from one side to the other of the main terrace.

It was upon this smaller terrace that all the best preserved mounds stood. The finest of all the mounds (No. 1) is 31 yards square, 33 feet high, and possesses four narrow terraces, the walls between which incline slightly inwards, so that the summit of the mound is only 24 feet square. The angles are rounded, and the whole surface of both walls and terraces is covered throughout with very neatly cut blocks of hard, crystalline limestone. The east and north sides of this mound are almost perfect; the west and south have unfortunately fallen away somewhat, owing to the fact that several large trees had taken root in them, and forced the stones apart. Upon the summit, where in all probability a small temple once stood, nothing now remains but a large heap of cut stones.

There are five other mounds upon the small terrace. No. 2 is 37 yards in length, by 24 yards in breadth, and 30 feet in height, and has three terraces. No. 3 is 6 yards in breadth, by 42 yards in length, and 8 feet in height; it possesses only two terraces. No. 4 is 25 yards square, and is a mere heap of ruins, in which it is impossible to make out the original number of terraces and walls. No. 5 is also a mass of ruins, and stands upon the edge of the main terraces, but a great part of it has now fallen. No. 6 is a small circular heap of stones, 24 feet in diameter, and 3 feet in height; into this we made a circular excavation, but nothing of much interest was found, except large quantities of fragments of hard red brick, of all shapes and sizes, together with one-half of a rubbing stone, and two pieces of Esquipulas stone which had, at one time, formed its "brazo." An excavation was also made to a depth of about 10 feet in the centre of mound No. 4, and here again large quantities of brick were found, indeed, irregular fragments of this brick seem to have been used as filling for the pyramids, whilst large flat blocks of it were used for paving purposes.

The whole surface of the large terrace was covered at one time with mounds of varying size, all faced with squared stone, but, with the exception of the three already described, upon the small terrace, nothing now remains of any of them but irregular piles of ruins, upon the surface of which lie large quantities of the worked stones which once covered them. The mounds, which still remain intact, prove that the erection of the whole structure must have been an undertaking of considerable magnitude, and, furthermore, that the now uninhabited bush must at one time have supported a very considerable population; for each of these exceedingly hard stones, some weighing 3 or 4 cwt., had to be quarried out (with flint implements), brought to the ruins, and accurately squared, also by flint implements only. A very considerable expenditure, both of time and of labour, must have been necessary for these various processes, and one cannot but wonder whence the builders came? what was their history? and, above all, how it is that they have so completely disappeared? Judging by other similar ruins, found in various parts of Central America, it seems highly probable that these structures were originally erected purely for religious purposes; the stone-faced pyramids simply acting as bases upon which small cues, or temples, stood; the terraces being used by the priests as promenades along which religious processions could ascend and descend, to and from the temples, in sight of the assembled people. It may be asked, Where are the palaces of the kings, and the dwellings of the Caciques, and priests, of a people who could erect such great structures, in honour of their gods? The houses of the common people were, we know, then, as now, built of leaves, wood, and adobe, and perished completely within a few years. It may be however that somewhere back in the as yet unexplored bush, beyond the Rio Grande, the ruins of an ancient city still exist; for the bush guards well the secrets of the past, and one may pass within 500 yards of the vastest ruins in Central America without being aware of the fact.

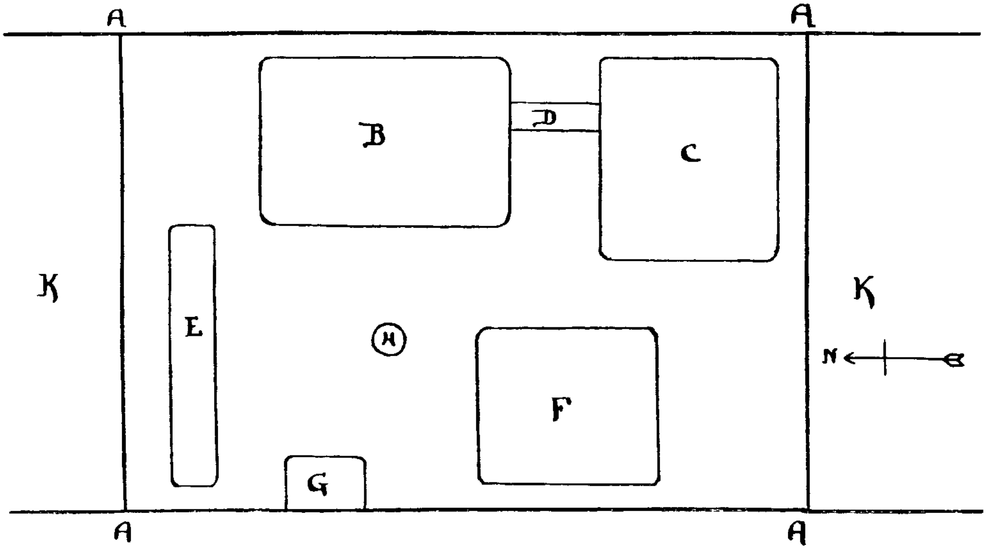

FIG. 1.—PLAN SHOWING POSITION OF MOUNDS AT THE RIO GRANDE RUINS.

AAAA.—Small stone-faced terrace or platform, upon which stand all the mounds still in a good state of preservation : 100 yards long by 70 yards broad.
B.—Mounds, 37 yards by 24 yards, containing three terraces.
C.—Mound, 31 yards square, containing four terraces.
D.—Paved passage between the two mounds.
E.—Mound containing two terraces, much broken down in places.
F.—Mound almost entirely in ruins.
G.—Mound in very ruinous condition, abutting on edge of main platform.
H.—Circular mound, into which an excavation was made.
KK.—Large stone-faced platform, extending on either side of small platform or terrace. It is covered with mounds, all in a ruinous condition. '300 yards long by 70 yards broad.

THE DOG-MOTIVE IN BORNEAN ART.

By Ernest B. Haddon.

Among the inhabitants of Borneo tattooing of the body and limbs is very common, and the motives of the designs vary considerably. An animal motive is readily apparent in some patterns, but so conventionalised has it become in most, that it is difficult to discover its identity; and it is only by comparison with more simple figures that it can be understood.

Dr. A. W. Nieuwenhuis,[1] found that it was possible to divide the inhabitants of Netherlands Borneo into three groups according to their method of tattooing. The tattoo patterns of the women should alone be studied, because the men are often tattooed with foreign patterns when on their travels. The three groups are:—

1st Group.	2nd Group.	3rd Group.
Bahau, Kenyah, Punan.	Bukat, Beketan.	Tribes of the Barito and Melawi Rivers, and the Ulu Ayar of Mandai River.
Patterns of dark lines in isolated figures.	Whole body tattooed so that the pattern is left in skin-colour.	The whole body decorated with dark lines.
Men have shoulder, breast and thigh decorated.	Bukat youth tattoos on chest after an heroic deed, and later all over.	Men commence with calf of leg.
Women have fore-arms, hands and ankles tattooed.		Women chiefly hands and legs.
Tattoo patterns on blocks ...	Pattern drawn free-hand on skin.	Pattern drawn free-hand on skin.
Black colour only	Black colour only	Red and black.
Women tattooers	Women tattooers	Men tattooers.

It is interesting to note that the first group, in addition to the Punans, contains the low-brachycephalic Bahau-Kenyah tribes to whom the Kayans are related; the second consists of nomadic hunting peoples; and the third contains the dolichocephalic element of Netherlands Borneo. These three groups nearly agree therefore with the classification of these peoples by their physical characters.[2]

Dr. Hose has stated[3] that the Punans do not tattoo. He was evidently referring to the Punans in a wild state, free from foreign influence, for the Punans of the Baram District who have come under Kenyah or Kayan influence, tattoo themselves in Kenyah-Kayan fashion.

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[1] *Quer durch Borneo, Ergebnisse seiner Reisen in den Jahren*, 1894, 1896–97 *und* 1898–1900, *Erster Teil*, 1904.

[2] Cf. *Man*, 1905, 13, February.

[3] *J.A.I.*, xxiii, p. 167.

Ling Roth,[1] quotes de Windt's description of tattooed Punans. There is no evidence that de Windt ever came across wild Punans, those he met were Punans who had lived with Bakatans or Kanowits, and, from the description he gives, their tattooing was evidently borrowed from the Kanowits, who seem to belong to Nieuwenhuis' second group. The Punans that Nieuwenhuis observed were probably in the same way under Bahau-Kenyah influence and therefore used their patterns.

Dr. A. C. Haddon[2] says that the Ibans (Sea Dayaks) did not tattoo before they came under Kayan influence, and they themselves admit, as is quite obvious, that they use Kenyah or Kayan designs. The women do not tattoo or only very slightly.

Under these circumstances we may regard the first group as containing the Bahau-Kenyah-Kayan peoples, together with the Punans and Ibans, both of whom have copied the designs of the Bahau-Kenyah-Kayan peoples.

Dr. A. W. Nieuwenhuis[3] says quite definitely that a tattoo pattern used by the men of the Bahau or Mendalam tribes, and called by them *aso*, "dog," represents either the head or the whole body of a dog.

Dr. W. H. Furness,[4] speaking of the isolated tattoo patterns of the Kayans of the Baram District, says, "The designs consist of extremely conventionalised representations of 'dog,' 'scorpions,' and 'heads of a prawn'; these are the native names given to different patterns: in none of them is it possible to recognise the animal after which it is named. Professor Alfred C. Haddon has expressed to me the extremely ingenious explanation, that, notwithstanding the native names, all these patterns represent the head of a dog. To this I modestly and most humbly demur, and incline to the belief that it is rather the head of that animal which enters so largely into all their ceremonials, namely, the pig. It may be noted, furthermore, that this same pattern, whatever be its origin, enters into all Kayan decoration, whether of doors, of beams, of implements, of bead-work or of graves."

Drs. Hose and McDougall[5] say, "It is usual for the Kenyah men to have one or more designs tattooed on their forearms, and shoulders. Among the commonest of these designs are those known as the scorpion, the prawn, and the dog. I is said that the dog's head design was formerly much more in fashion than it is at the present time." They inform us that the dog, though not a sacred animal, is allowed to prowl about, in and around the house, as it wishes, and no Kenyah dare kill a dog, indeed it is rarely kicked or struck. When a dog dies in a house its carcase is pushed out of the house and into the river with long poles. The spot where the dog died on the floor of the house is fenced round for some days to prevent the children walking over it. Although Dr. Hose says the dog is not treated with any particular respect, yet enough regard is paid to it to enable us to understand why it might appear as a common motive in designs.

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[1] *The Natives of Sarawak and British North Borneo*, London, 1896, vol. ii, p. 90.

[2] *Head-hunters, Black, White, and Brown*, London, 1901, p. 326.

[3] *Quer durch Borneo.*

[4] *The Home-life of Borneo Head-hunters*, Philadelphia, 1902, p. 147.

[5] *J.A.I.*, xxxi, 1901, p. 187.

The Kenyah-Kayan people carve their tattoo designs on wooden blocks. These are covered with soot and an impression is made on the spot to be tattooed. Certain designs or varieties of a design are always used to decorate a special spot of the body. Dr. Furness speaks of the impossibility of recognising the animal motive represented on the blocks; and from isolated specimens it is well-nigh impossible to do so.

Fig. 1 shows a tomb of a Murik woman. At each upper angle is a dog's head and body, near the middle of the fretwork is another dog facing to the right, and it is worth noticing that the artist has not been fettered by the idea of symmetry. We may regard the wavy pattern in the fretwork as the continuation of the conventional undulating body and tail of the dog. This suggestion is supported by the figure, Taf. 36, Fig. 66, given by Kükenthal[1] of a Long Kiput (Kalamantan[2]) tomb in which there is a dog's head at one end of the design at the top of the tomb, and a tail at the other end, the pattern being a wavy band with characteristic small scrolls in the sinuosities, the legs have quite disappeared.

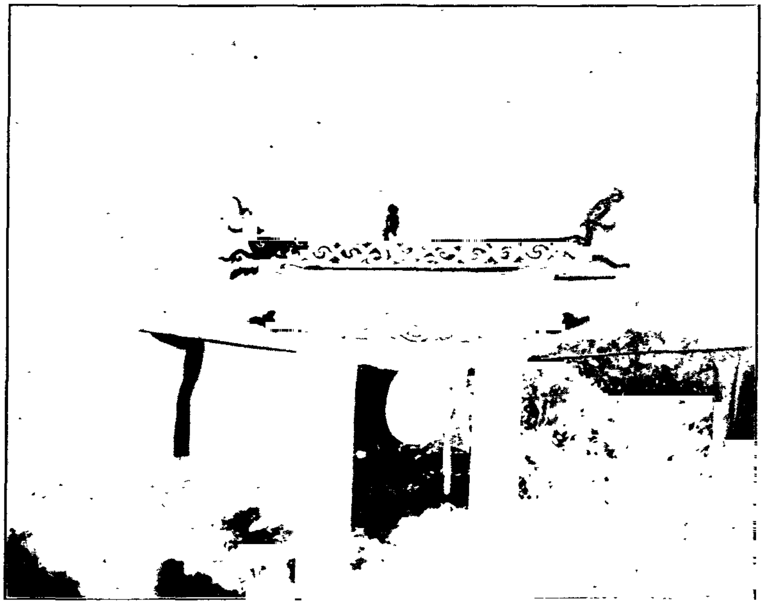
FIG. 1.

At first sight one might think that this figure is derived from a dragon; Chinese or Siamese jars, on which the dragon is so frequently depicted, are found in considerable numbers right into the interior of Borneo. Professor A. R. Hein[3] has discussed the whole question of these Chinese jars, but nowhere does he suggest that the dragon has been copied by the natives of Borneo. The dog-motive certainly does, in many cases, resemble the dragon, but it seems to be another example of convergent evolution, the two motives developing along their own lines, gradually becoming more and more similar. There is no recorded evidence that Chinese designs are copied by the people in the interior of Borneo. Very occasionally in Iban mural decoration we find Chinese symbols employed, but the Ibans are a coast people who are ascending the rivers, and have moreover been in contact with Chinese traders for a considerable period of time.

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[1] *Forschungsreise in den Molukken und in Borneo,* Frankfurt a.M., 1896.

[2] For an explanation of this term see *Man,* **13**, 1905.

[3] *Die bildenden Künste bei den Dayaks auf Borneo,* Wien, 1890.

Dr. Nieuwenhuis gives a very complete series of tattoo blocks, illustrating the evolution of the dog-motive in Netherlands Borneo. Fig. 2A shows what the natives informed him was a dog; in general appearance it closely resembles the animal on the Long Kiput grave (*cf.* Kükenthal); in fact it might be taken for a snake, but for the legs, which are, however, not conspicuous. Fig. 2B is a "dog's" head, but complicated by scrolls. In this the teeth have been left out. The carver has, however, incised them in position, but in such low relief that they would not appear in an impression of the block, thus satisfying the feeling of expectancy. Fig. 2C illustrates a still more conventionalised dog's head, from which the teeth have quite disappeared. Fig. 2D represents two dogs' heads facing right and left, one eye serving for the two heads. Fig. 2E shows a simpler form of D, in which the jaws are quite simple, and the eye has become the most important feature of the pattern. Figs. A, B, C, D, E, are all called *aso,* "dog." Fig. 2F is a rosette which, judging by this series, is obviously derived from the eye of the dog's head; Dr. Nieuwenhuis does not say whether the natives realise this, but he leads one to believe that they are totally ignorant of the fact. The rosette tattooed on the shoulders of Bahau-Kenyah people of Netherlands Borneo,

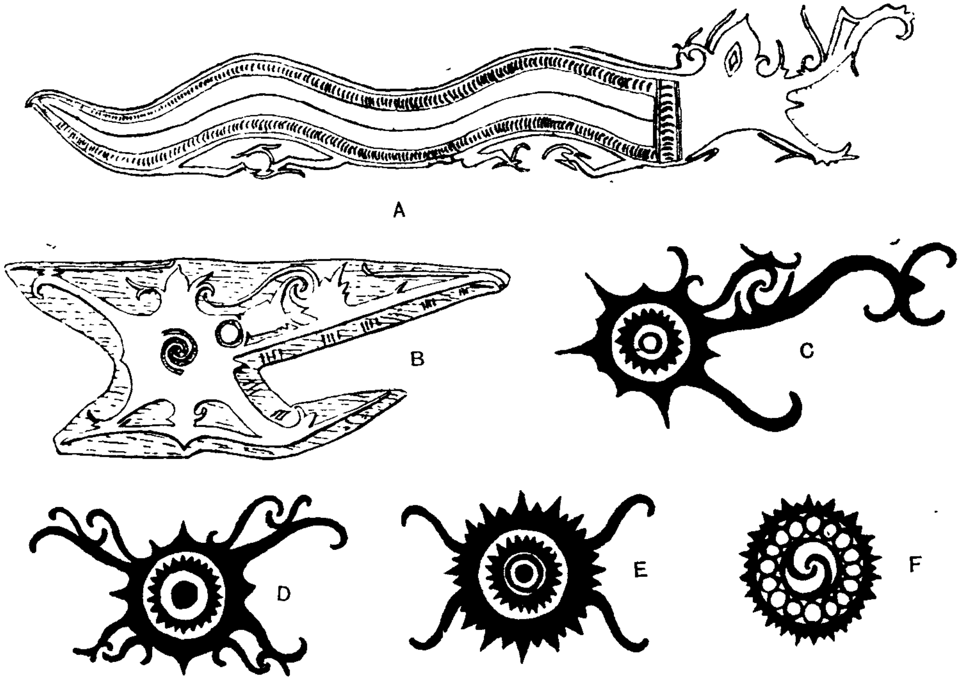

Fig. 2.

is found on the same spot on all the Kenyah-Kayan people of Sarawak. Among the Ibans, Kalamantans and Punans, similar patterns are found tattooed on the same spot. The rosette was brought by the Kenyahs and Kayans on their immigration into Sarawak, and possibly even they, at that time, did not realise that it was a conventionalised dog's eye.

Adopted by the Ibans it appears as a star-shaped or cruciform device, which according to unpublished information collected by Dr. Haddon and the figures published by Dr. Furness (p. 148), is called by them after the name of a fruit or flower. Undoubtedly the Ibans consider the rosette as a floral design, especially as the representation of plant forms is traditional among them, but that is no reason why this so-called flower design should not be derived from a dog's eye. The Iban name of this design carries no weight, since even the Kayan or Kenyah introducers of the rosette appear to have ceased to remember its origin.

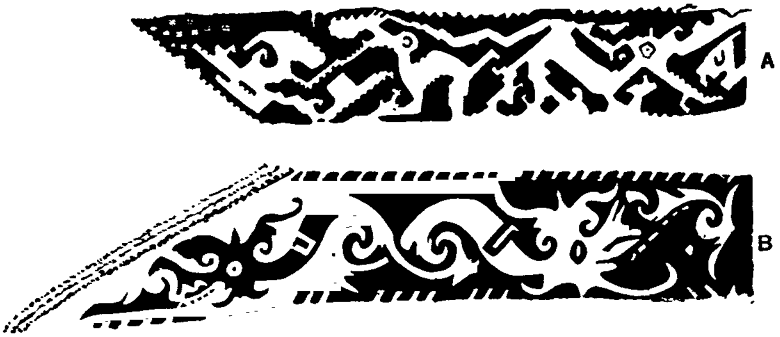

FIG. 3.

According to Dr. Hose, the Kenyahs and Kayans immigrated into Sarawak some three hundred years ago, and thus it is not surprising to find that their patterns have become specialised.

I have not been able to obtain intermediate links connecting the isolated tattoo designs of the Kenyahs and Kayans of Sarawak with the designs obtained by Dr. Nieuwenhuis in Netherlands Borneo, though when further work has been done, it is possible that a complete series will be made out. The designs tattooed on the forearms and thighs of the Kayan and Kenyah men of the Baram District of Sarawak are on the whole remarkably well defined and constant, they are called *aso.*

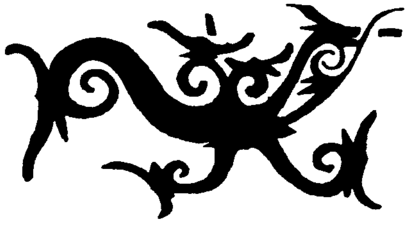

FIG. 4.

In Fig. 3A, which is a tracing of bead-work on the scabbard of a *parang,* we see a dog pattern. The representation on the right shows a very typical dog's head, with a decorated upper jaw, and a simpler lower jaw. In Fig. 3B, also bead-work, are two dogs with interlacing bodies. The upper jaw is complicated, and half way along its length appears a scroll, which is very characteristic; this scroll I believe to be the representative of the eye-tooth, which has been accentuated and used as a decorative feature of the upper jaw. The ears are enlarged, and highly decorative. The lower jaw is simple, and is balanced on the other side of the head by a projection, which may either be the representation of the fore-leg, or the expression of the idea of symmetry. Above it the body curls away in a sinuous curve. The figure to the left repeats the main features of the other. In Fig. 4 we find the embodiment of the same idea as in 3B; the upper jaw is more decorative, and the scroll in its middle is more complicated; the ears have lost their symmetry, and the eye is left out. The body is reduced, and the curve below the head more nearly balances the lower jaw. This block is labelled by Dr. Hose "*Tuang orang.* The *Tuang* means a 'pattern' and *orang* is the Kayan for 'prawn.'" Fig. 5 shows further complication in the upper jaw. The body, represented by the upper curve to left, is shortened, and the lower left curve is symmetrical with the lower jaw. This figure is a very typical Kayan or Kenyah tattoo block. (Cf. Furness, p. 148.)

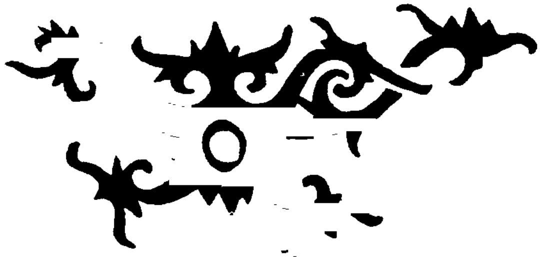

FIG. 5.

The Kayan tattoo block, Fig. 6, shows further modification; the upper jaw is relatively longer, and the lower jaw shorter. The upper curve on the left, representing the body, is now quite short, and is symmetrical with the lower one.

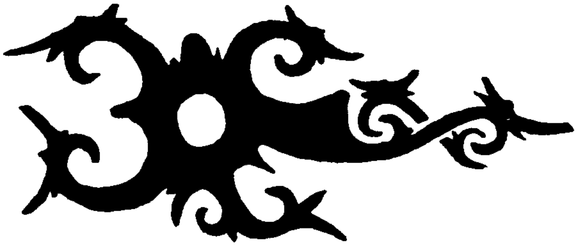

FIG. 6.

Fig. 7 is a block used by Lelak men. Its interest lies in the fact that conventionalised teeth are placed on the upper jaw. This block does not seem to be used by Kenyahs or Kayans, but it is a type used by Kalamantans or Punans, who have copied Kenyah-Kayan designs. As a vagary of these designs, it shows that the Lelaks have realised its motive, and have placed teeth in their proper position.

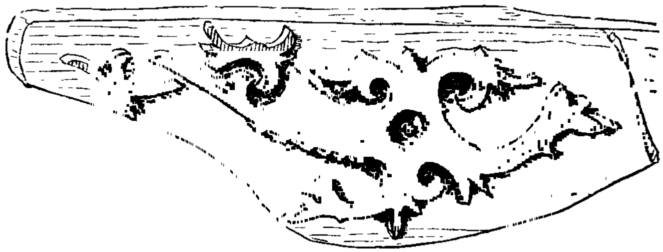

FIG. 7.

In the decoration of bamboo tobacco boxes the Kenyahs and Kayans very frequently have incorporated the dog as the motive of the design. In Fig. 8, a rubbing of such a box, one sees how the dog has been treated; in all cases the dog is represented with its head looking backwards. In the two upper figures, the tail and the lower jaw are produced into beautiful interlocking spirals, the upper jaw is decorated with elaborate scrolls, and the eye-tooth is plainly distinguishable. The ears are prolonged into delicate spirals. The two lower figures, which are upside down, have the lower jaws differently treated; the jaw of the one to the left passes right through the great spiral, and terminates in a small spiral. The upper jaws and ears are quite characteristic. In Fig. 9 the upper jaws and ears are characteristically represented. The lower jaw is variously treated, in the upper middle dog it is turned backwards and quite short, in the lower middle dog it crosses the tail of the animal in front. The curious crossing of parts as if they passed through holes in the bodies, is quite characteristic of the art of these people. Mention might here be made of the breaking of the straight lines of the border pattern, which occurs in this and other figures. This also is a very noticeable feature in the decorative art of the Kenyah-Kayan peoples, and it gives a pleasing appearance of lightness to their designs.

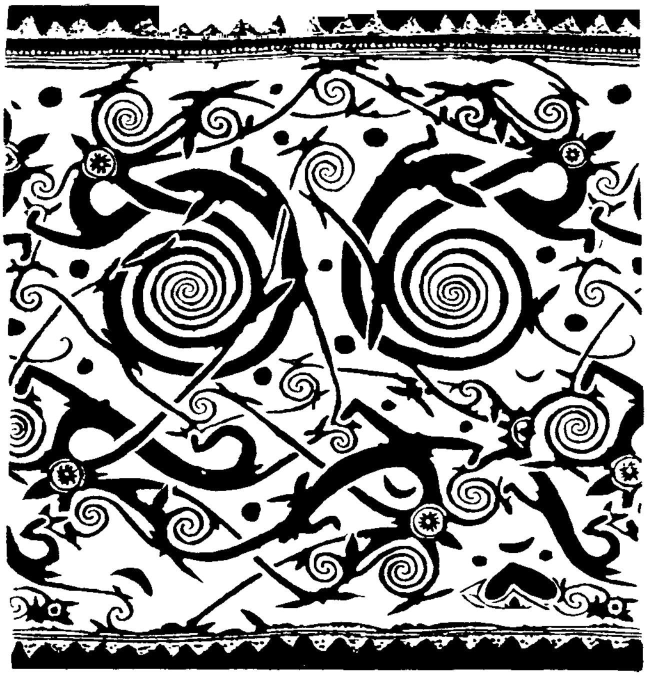

FIG. 8.

In copying a design it must of necessity often happen, that the space to be decorated is not so large as in the original, and in order that the space may be artistically filled, the design must be altered to suit the requirements of the space. Besides the alteration of the design to fit the needs of the case, a pattern always loses its character in successive copyings. In Fig. 10 the animals are much cramped and distorted, and are represented with their jaws widely gaping, and ending in simple spirals. In the figure in the left hand

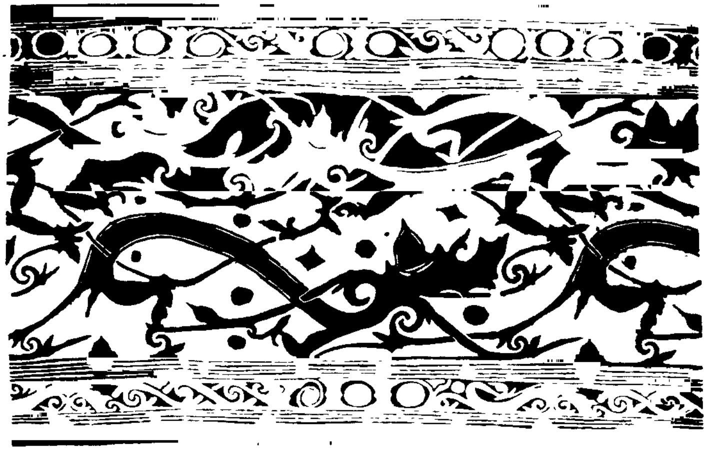

FIG. 9.

upper corner, the upper jaw is to the left, the eye-tooth and scroll being readily seen, and the lower jaw lies to the right; both are toothed. The middle figure, in which the body is present, likewise has its toothed upper jaw to the left and the toothless lower jaw to the right. The figure to the right, which is upside down, shows the toothed lower jaw to the left, the upper jaw, showing the characteristic scroll, being to the right.

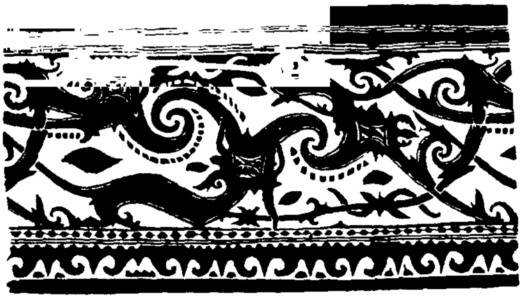

FIG. 10.

Fig. 11 is very similar to Fig. 10, and the animals bear the same relative position to one another, and though they are still more conventionalised, no detailed description is necessary. But an important change has taken place, the jaws are now called, according to information obtained from Dr. Hose, *ulu orang*, that is, "head of a prawn." The dots which in Fig. 10 represent the teeth are in the case of the middle figure placed on both sides of the upper jaw, and no doubt to the native eye represent the annulations of the antennæ of a prawn. What most probably has happened is that in successive copyings the jaws lost their true character, and at one time, as the carving appeared to look like a prawn, it was so-called and the name has persisted.

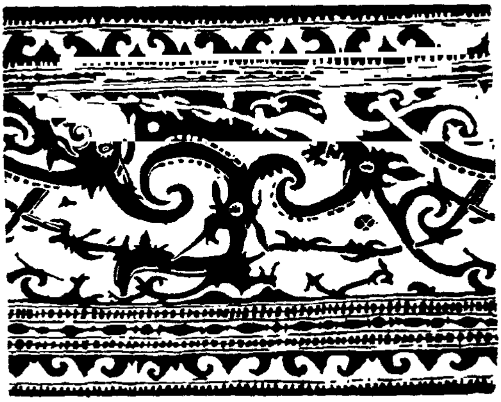

FIG. 11.

Fig. 12 shows how the stage represented by Fig. 11 may become still more simplified. Here the animal to the right represents the central dog of Fig. 11; the central design is still less dog-like than the corresponding upper left hand design of Fig. 11; whilst the scroll pattern to the left is the vestige of the animal on the right in Fig. 11. In Fig. 12 Dr. Hose has not obtained the native names for these animals.

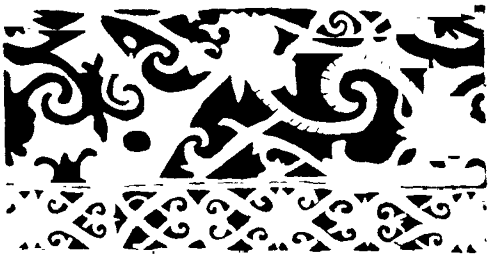

FIG. 12.

In Fig. 13, acknowledged on Dr. Hose's authority as a prawn-pattern, the design is more complicated, but the three animals are still depicted in their usual positions. On the right is an obvious dog, corresponding to the central animal in Fig. 10. The central design in Fig. 13 though complicated is decipherable. The upper jaw stretches away to the left with the teeth and the scroll in the normal position, the lower jaw forms a spiral with the upper jaw of the next animal. On the upper left angle we see the body of the corresponding dog represented on the right in Figs. 10 and 11, but though the head has disappeared, yet the two toothed jaws appear, the lower to the left interlocking with the lower jaw of the first dog and the upper sweeping down to the right. In this rubbing, only the head of the central animal is called *ulu orang*, and it is possible that it is this part alone of the pattern that they identify with a prawn. On the other hand it is equally probable that the Kenyahs and Kayans have completely forgotten the origin of these complicated patterns.

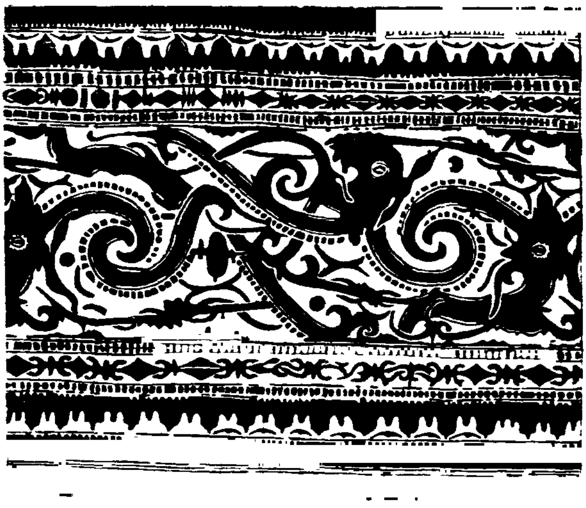

Fig. 13.

Fig. 14 shows some very interesting features. In the first place, the dots, which in the foregoing figures represent the teeth in position along the conventionalised jaws, are, in this carving, placed indiscriminately along various portions of the body. The right-hand animal is apparently a dog looking back over its shoulder, and the two jaws are represented facing to the right. What, by the light of the evidence in the preceding figures, must be regarded as the lower jaw, is seen on the left of the head, and has no connection with the upper jaw. If, on the other hand, the upper jaw were turned forwards, so that the eye-tooth pointed upwards instead of downwards, then the animal would be gaping widely as in the foregoing figures. In the figure on the left, the lower jaw forms an incipient spiral with the lower jaw of the animal on the right. The upper jaw is reversed as in the other figure. The carver was evidently under the impression that he was carving a dog design, and therefore depicted the dog on the right hand side,

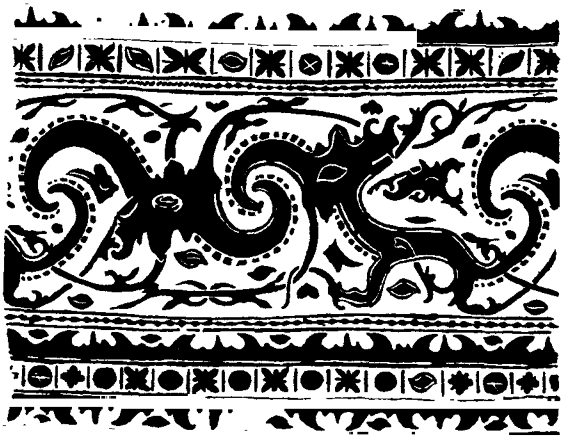

Fig. 14.

but did not leave himself room to carry it out on the left. Moreover he was fettered by the traditional spiral interlockings of jaw with jaw, and for this reason, partly because he neither blindly followed others or boldly drew his idea of a dog, he produced a design, which varies in many respects from other examples of Kenyah art.

It is more than probable that he has been influenced by designs in which the dog does look over its shoulder as in Fig. 8. It will also be noticed that the tail of the right-hand dog interlocks with the curve of the design on the left, this curve probably representing the body; and that the interlocking parts have dots along their length, as if they represented the teeth of interlocking jaws.

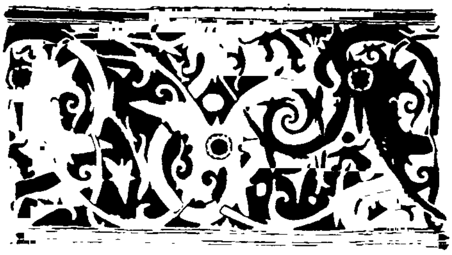

FIG. 15.

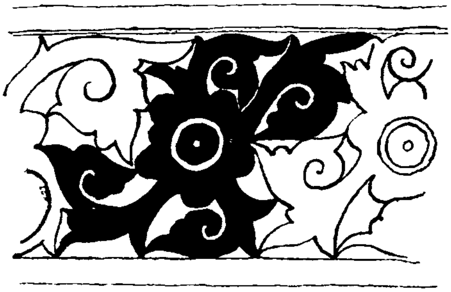

FIG. 16.

In the interspaces are carved the head of a hornbill and a dog design. The latter is upside-down, and is only a slightly modified copy of the tattoo patterns of these people as in Fig. 6.

In Fig. 15 one sees how far a design may be complicated and contorted. In the centre is a figure with a widely gaping mouth, opening upwards, the upper jaw being to the left, and the lower to the right where it forms a spiral with the lower jaw of the animal to the right. The hypertrophied upper jaw of the right hand figure stretches downwards and backwards. The ears are well represented in both animals. The body of the central animal curls right round, and passes across the upper jaw, the tail and hind legs appear at the top of the design, above the eye. The body of the right hand figure has a similar curvature, the hind legs appearing at the bottom of the design below the eye.

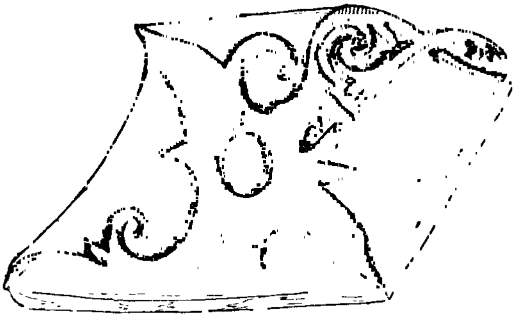

FIG. 17.

Fig. 16 is a sketch of part of a drawing of a "Dayak" bamboo carving in the k.k. Hofmuseum at Vienna, figured Taf. 10, No. 14, by Professor A. R. Hein.[1] One element of the pattern has been blacked in for the sake of clearness, the design being repeated to form a running pattern. At first sight the design appears to be a floral pattern, but on comparison it will be seen that it bears considerable resemblance to the dog-motives of Fig. 15. This view is further strengthened by its resemblance to the Berawan tattoo block, Fig. 17. We are, I think, quite justified in thinking that the design in Fig. 16 is a modification of the conventional dog-motive, but one would like to know the exact name of the tribe.

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[1] *Die bildenden Künste bei den Dayaks auf Borneo*, Wien, 1890.

In a publication by J. A. Loebèr, Jr.,[1] twenty-one bamboo carvings collected by Dr. A. W. Nieuwenhuis are figured. Many of these examples show how the dog-design is treated by the Kayans of Netherlands Borneo. On *Plaat* XI, No. 16, is figured an animal design, which, on comparison with various Kenyah designs figured in this paper, is clearly seen to be a conventionalised dog. The design, which is upside down, shows a very typical upper and lower jaw, but the body and limbs are rather confused and degraded. In *Plaat* V, No. 9, at the base of the central triangle, there is an example of a dog, with widely gaping jaws, and the body shows the sinuous curves found on the Murik sarcophagus (Fig. 1), and another dog is seen above the triangle. In *Plaat* VI, No. 10, most of the ornamentation owes its origin to the dog-design. Dogs are also to be seen in *Plaat* IV, Nos. 6, 7, and elsewhere.

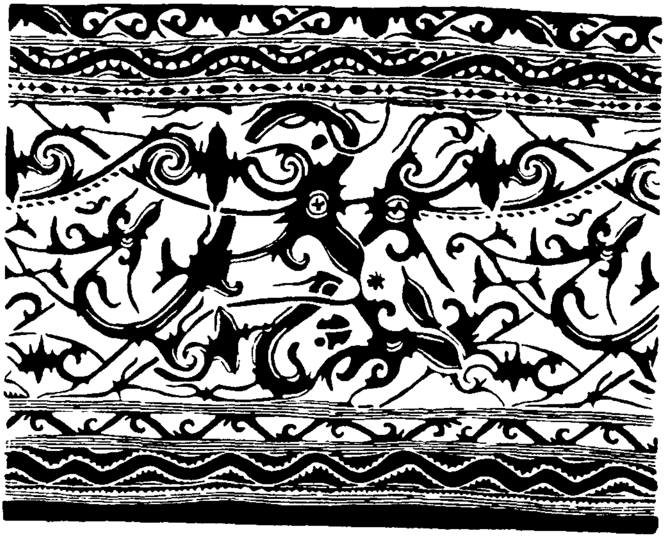

FIG. 18.

Kalamantan modifications of the dog-motive.

Kalamantan people who have come in contact with the Kenyahs and Kayans have, to a certain extent, absorbed their culture. Fig. 18 shows the design on a bamboo tobacco box, which, though artistic, is degraded and obscure. One sees that the design is based on a dog-motive, though the exact figures are quite indistinguishable. In the centre facing to the right is a representation of upper and lower jaws, the former being very long and toothed, and the body extends down to the bottom of the design. Facing to the left is another dog in which the upper jaw alone is distinct. Remembering that the Kenyahs call their own degraded patterns prawn designs, it is not surprising to find that most of the Kalamantan patterns of this type are also called prawn designs, and it is more than probable, that anything resembling an animal motive is called by the Kalamantans a prawn-motive.

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[1] *Bamboe-ornament der Kajan-Dajaks*, Haag, 1903.

This is borne out by the fact that the tattoo blocks which they have borrowed from the Kenyah-Kayan people are termed *orang*, "prawn." Such a block as is represented in Fig. 6 could be exactly matched by a Kalamantan block, which they would call *orang*. Many of their blocks are evidently derived from Kenyah or Kayan tattoo blocks, and several new designs with various names have thus been formed.

Iban modifications of the dog-design.

Besides the modifications of the rosette under the names of fruit and flowers the Ibans have modified other Kenyah-Kayan tattoo designs.

The tattoo design used by the Kenyahs and Kayans for decorating the forearm, has been copied and adopted by the Ibans in the same way as the Kalamantans have done, the main difference being, that the Ibans call the design a scorpion (*telingai*).[1]

For this reason, the pattern tends to become more and more like the scorpion, but even in its most specialised form, the eye of the dog is generally retained.

It is here interesting to note, that, according to Mr. Shelford, the *telingai* or "scorpion" design is often carved on the handle of the *niabor* or Iban *parang* or sword.[2]

Fig. 19 shows a typical "scorpion" tattooing. Other examples are figured by W. H. Furness (p. 148, Figs. 1, 5), under the Iban and Malay name of *kala*, "scorpion." It is worth noting that Dr. Furness on the same plate, Figs. 9, 15, calls a Kenyah tattoo design similar to my Fig. 5, *kala asu*, the "scorpion dog." This term requires further investigation; perhaps this should be *kalang asu*, *i.e.*, "pattern dog."

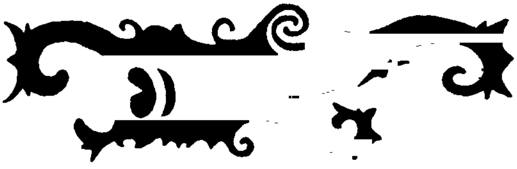

FIG. 19.

To sum up, it appears as if the dog design originated with the Bahau-Kenyah-Kayans, and was carried by them in various migrations from their fatherland in Apu Kayan at the upper waters of the Kayan or Bulungan river. Dr. Nieuwenhuis has described the modifications that occur in their designs in Netherlands Borneo. In this paper I have attempted to indicate (1) the evolution that has occurred in the dog-motive among the Kenyah-Kayan group in Sarawak; (2) the modifications that have taken place in this motive, more especially in the tattoo designs, among the Kalamantan tribes of the Baram District, where the design appears to be regarded as a prawn; and (3) the degradation of the same motive by the Ibans of the Rejang District, who consider it to be a scorpion.

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[1] Dr. Hose informs me that "*telingai* means a reflection such as would be seen when looking into clear water"; but Mr. Shelford and others give "scorpion" as the meaning.

[2] R. Shelford, *Journ. Anthrop. Inst.*, xxxi, 1901, p. 223.

List of Illustrations.

Fig. 1.—Sarcophagus of a Murik woman, Baram District, from a photograph by Dr. C. G. Seligmann (cf. *J.A.I.*, xxxi, 1901, pl. xv, fig. 1).

,, 2.—Sketches of tattoo-blocks figured by Dr. A. W. Nieuwenhuis (*Quer durch Borneo*, Taf. 82, p. 456).

,, 3.—A. Diagram of the beadwork on the scabbard of a Long Sibatu Kenyah *parang*, Baram District; Cambridge Museum.

B. Diagram of the beadwork on the scabbard of Tubau Kayan *parang*, Bintulu River, Sarawak. The coloured drawing from which this was taken was made by R. S. Douglas (now Resident of the Baram District) for Dr. Haddon.

,, 4.—Print from tattoo-block, Baram District; Cambridge Museum.

,, 5.— ,, ,, ,, ,, ,, ,,

,, 6.— ,, ,, Kayan, Baram River; A. C. Haddon Coll.

,, 7.—Sketch of ,, "used by Berawan men"; Hose Coll. Brit. Mus.

,, 8.—Rubbing of carving on a Kayan tobacco box; No. 566, Sarawak Mus. This formerly belonged to Dian Batu, Chief of the Kayans of the Rejang River.

,, 9.—Rubbing of carving on a Kenyah? tobacco box; Bampfylde Coll.

,, 10.— ,, ,, ,, ,, ,, ,, Tinjar River; Camb. Mus.

,, 11.— ,, ,, ,, Lirong ,, ,, ,, ,, ,, ,,

,, 12.— ,, ,, ,, Kenyah ,, ,, ,, ,, ,, ,,

,, 13.— ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,

,, 14.— ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,

,, 15.— ,, ,, ,, ,, ? ,, ,, ,, Bampfylde Coll.

,, 16.—Sketch of a portion of a pattern figured by Prof. A. R. Hein (*Die bildenden Künste bei den Dayaks auf Borneo*, Wien, 1890, Taf. 10, No. 14).

,, 17.—Sketch of a tattoo-block "used by Lelak men," Hose Coll. Brit. Mus.

,, 18.—Rubbing of carving on a tobacco box; Bampfylde Coll. (probably Kalamantan with a good deal of Kenyah influence).

,, 19.—Tattooing on the arm of an Iban, Jilai. The design was called *telingai*, "scorpion"; from a sketch by Dr. A. C. Haddon.

I am indebted to the kindness of H. Ling Roth for the use of the blocks, figs. 7, 17, from *The Natives of Sarawak and British North Borneo*, London, 1896, vol. ii, p. 85.

Figs. 11, 12, 13, are from rubbings made by Dr. C. Hose, and given by him to Dr. A. C. Haddon; all have notes on the patterns, made by Dr. Hose, which have afforded me valuable clues.

Figs. 8, 9, 15, 18, are from rubbings made by Dr. A. C. Haddon when in Kuching, from specimens belonging to the Hon. C. A. Bampfylde, Resident of the district.

Figs. 4, 5, 6, 7, 17, are ½ nat. size.

Figs. 3A, 3B, 8–15, 18, are ⅓ nat. size.

REPORT ON THE ETHNOLOGY OF THE STLATLUMH OF BRITISH COLUMBIA.

BY CHARLES HILL TOUT, Local Correspondent of the Anthropological Institute.

[WITH PLATE XV.]

THIS paper contains a summary of my studies of the Stlatlumh tribes, one of the interior divisions of the Salish of British Columbia.

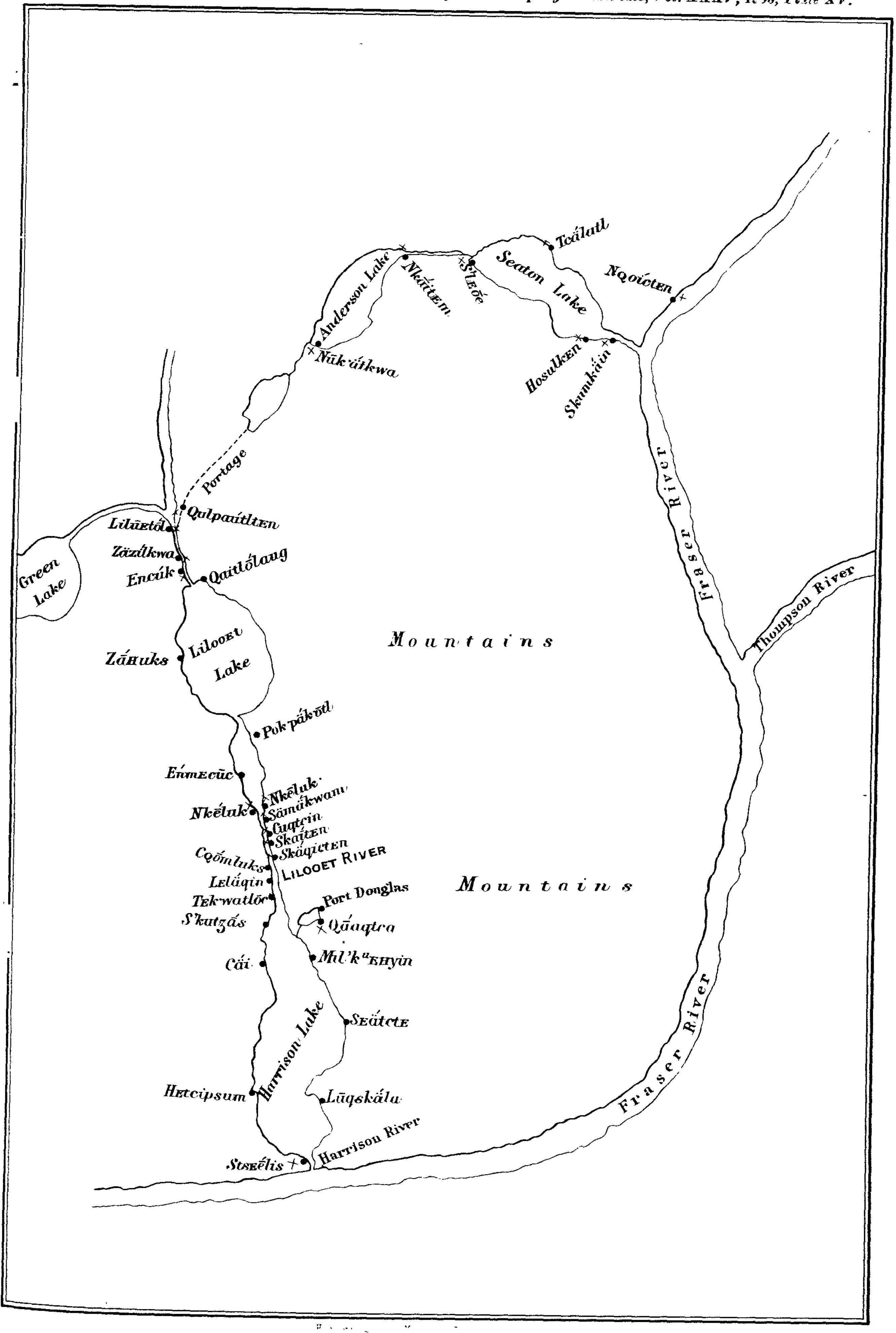
I have to acknowledge my indebtedness to the Government Grant Committee of the Royal Society for substantial help and encouragement in my work in the form of a third special grant of £40; to the Government of British Columbia for a grant of $100; and to various kind friends for other help and assistance.

It is gratifying to be able to report that my studies of the Stlatlumh, popularly known as the Lillooets, after the name of one of the chief rivers of their habitat, have been fruitful in bringing to light a body of new and interesting information relating to tribal and sub-tribal origins; to the source and significance of personal and group names; to the nature and character of personal and hereditary totems: and to certain magical ceremonies, which in some striking features resemble the *Intichiuma* ceremonies of the Arunta and other central Australian tribes, and which are carried out for a like purpose.

Indeed, my notes will recall to those familiar with Messrs. Spencer and Gillen's works on the central and north-western tribes of Australia many features of the culture of the natives of that country.

One of the more striking of these resemblances is the common use, among the two peoples, of mystic and secret names. I call attention to this fact because I believe we have yet much to learn concerning personal and group names as they are found among primitive races; and certainly the fact that we find two peoples, so widely separated and so physically dissimilar as the black-fellows of Australia and the natives of America, holding similar views in this regard, makes it clear, I think, that we are here dealing with some deep-lying universal concept of primitive man, the nature and significance of which is of the highest importance to us in our studies of primitive life and culture.

With this thought in mind I have paid special attention in my investigation to the name systems of the Stlatlumh and cognate tribes. I was unusually fortunate this year in securing the services of a highly intelligent and elderly Indian who possessed a workable knowledge of English, and whose memories go back to times and events ante-dating the settlement of the whites in these parts. His affiliation to both Halkōmēlem and Stlatlumh divisions, his personal knowledge


Tcálatl
Anderson Lake
Nkáitæm
S'lEōe
Seaton Lake
Nqoícten
Nūk'ātkwa
Hosulken
Skamkáin
Portage
Qulpaítlten
Lilūetōl
Zāzúlkwa
Encúk
Qaitlōlaug
Green Lake
Lilooet Lake
Zāhuks
Mountains
Fraser River
Thompson River
Pok pák ōtl
Enmecūc
Nkēluk
Nkēluk
Sāmákwam
Cuqtcin
Skáiten
Skáqicten
Cqōmluks
Lilooet River
Leláqin
Tekwatlōr
S'katzás
Port Douglas
Qáaqtca
Mountains
Cāi
Mil'k^aEhyin
Seátcte
Harrison Lake
Hetcipsum
Lūqskála
Harrison River
Stseēlis
Fraser River

of both tongues, and his close acquaintance with all that concerned the inner life, thoughts and customs of the Indians, enabled me to gather from and through him much long-desired information on some of the doubtful and obscure points in Salish culture. When possible I sought confirmation of his statements from other Indians and invariably found them accurate. My intercourse with him has left no doubt in my own mind that such information as I gathered from him is wholly trustworthy.

Those who have followed my examinations of the Salish dialects will find much to interest them in the peculiarities of the StlatlumH speech, which appears to occupy a transitional position between the dialects of the interior and those of the Delta and Coastal tribes; the speech of the upper or northern tribes having many resemblances to the N'tlakápamuQ and that of the lower to the Halkōmēlem, though the dialect as a whole is distinct from that of either of these divisions.

ETHNOGRAPHY AND SOCIOLOGY.

The StlatlumH occupy a considerable extent of territory and were formerly a strong and populous division. Since the advent of the white man, however, they have, like their conquerors elsewhere, greatly decreased in numbers, and quite a third of their old villages are now wholly abandoned. Like most other American tribes their settlements are confined to the borders of the lakes and rivers of their habitat; and as these run more or less in a continuous line north and south, their territory is much longer than it is broad, the distance between the most southern and the most northern tribes being upwards of two hundred miles. The intercourse between the upper and the lower tribes was therefore never very close or frequent, and it becomes easy to understand how the dialectical differences in their speech arose.

In the accompanying map (Plate XV) of the StlatlumH and adjacent territory I have marked the approximate sites of the settlements of the StlatlumH. Those marked with a cross are still occupied; the others are now deserted and have no occupants.

The villages, as will be seen, are more or less bunched into two groups; one on the upper waters which flow north-east and one on the lower which flow south. This break in the settlements corresponds to a natural topographical one. It is here that the water-shed or "divide" is found which causes the rivers and lakes to run in opposite directions.

In former times the settlements of the StlatlumH proper did not extend so far south as at present. Prior to the advent of the "gold rush," about the middle of the last century, the Halkōmēlem territory took in the whole of Harrison Lake and some portion of the Lillooet River; but with the discovery of gold in the Cariboo region many of the miners instead of going up the Fraser to Yale, chose the Harrison Lake route and made Port Douglas their port of debarkation; and in consequence a populous little town soon sprang up here. This attracted the StlatlumH tribes above in such numbers, that in a generation the

Halkōmēlem speech of that centre gave place to the StlatlumH, which has ever since been spoken down to this point.

The southernmost tribes are, therefore, of mixed descent, being partly Halkōmēlem and partly StlatlumH. All the settlements south of Port Douglas on the Harrison Lake and beyond, as the map shows, are now deserted and unoccupied, and the nearest Halkōmēlem village is that of the StsEélis of whom I treated in my last report.

Following will be found the names of the settlements above the StsEélis as given to me by my chief informant "Captain Paul" of Port Douglas. I have given the meaning of these names as far as now ascertainable. All those on the shores of Harrison Lake, up as far as CQṓmluks, were formerly Halkōmēlem villages but are now numbered among the StlatlumH for the reasons I have given above. From this point northwards to far distant 'NQōíctEn stretched the original settlements of the StlatlumH in the order here given.

1. "Lūqskāla," *place of many berries, cf.* "skäl," *red huckleberry.* This settlement was noted for its berries.
2. "HEtcípsum," *narrow neck, cf.* tEpsum, *neck,* so called because here the Lake narrows to about a third of its usual width.
3. "SEátctE," meaning unknown.
4. "Mil'k^{u}EHyin," *standing strong, cf.* "SmalEk^{u}," *elk shirt,* and "Hyin," *foot.* The mountain here stood strong and impregnable like a man clad in elk-skin armour.
5. "Cái," *Doctor Point.* Name has reference to a shaman who was supposed to live here at the time when the Qals wandered about the country. There is a myth in connection with it.
6. "S'kutzás," *butting,* so called because, if one paddled on here, one would run against the head of the lake.
7. "Qăaqtca," *little lake.* This is a small lake that runs into Harrison Lake. On this Fort Douglas is situated.
8. "TEkwátlōc," meaning unknown. This place is used now as a fishing station and root ground.
9. "LEláqin," *Fishing stage.* This was a noted fishing ground. The shore is rocky here and the waters swirl by. The salmon take this course and the Indians erect staging over the water upon which they stand and fish with the dip-net. Hence the name.
10. "CQṓmluks," *falling on the nose.*
11. "SkáqictEn," *shallow water.* The river here spreads out and becomes very shallow.
12 "SkaitEn," *waterfall.* This was and is a great fishing ground, the "fall" in the river here causing the salmon to congregate. This is one of the most populous settlements.

13. "Cuqtcín," *narrow strait.* The mountain here comes close down to the bank of the river and forces travellers to walk on the "beach," *cf.* "Cúqatc," *beach.*
14. "Sämā́kwäm," meaning unknown.
15. "'Nk·ēluk," *head of the river.* There is here now a settlement on each side of the river with a church in each place.
16. "ÉnmEtcūc," this term has reference to the narrowing of the lake at this point. Close by here is one of the loftiest mountains of the district. It has a peculiar cleft in it. It is called "Encūkata," which means *split like a crutch.* At the time of the traditional flood those who escaped managed to do so by climbing this lofty mountain. Paul affirmed that the drift wood of the flood could be seen in the cleft of the mountain above the line of timber.
17. "Pok·pā́k·otl," *place of many store-houses.* These store-houses were erected on poles and stood from four to six feet above the ground. These are always found in localities when the ground will not permit of digging the commoner tcḗpōn or stone-cellars.
18. "ZāHuks," *long point or nose.* This spot is now the grave-yard of the district. Fifty years ago it was a populous village.
19. "Qaitlṓlauq," meaning unknown. Tradition says that it was here that the wolf people used to live. Wolves are supposed by these Indians to be dogs gone wild.
20. "Encúk·," *split.* There is a mountain opposite the village here with a great cleft in its summit, hence the name of the village.
21. "Zäzílkwa," *eddying water.*
22. "LilūEtṓl," *the real or true Lilūet.* The suffix *ōl* here has the same meaning as the suffix *ōe* of the N'tlakapamuQ, the final vowel "*e*" having been changed apparently to "*l*" in the StlatlumH.
23. "QulpaútltEn," *portage, cf.* "Qulpautl," *to haul a canoe over the ground.*
24. "Nūk·ā́tkwa," meaning unknown.
25. "N'kāítEm," *head or source of creek.*
26. "S'lEṓc," *head of the lake.*
27. "Tcalā́tl," *lake.*
28. "HōsúlkEn," *white-haired mountain goats.*
29. "Skumkāin," *head of the river.* This was a populous settlement in former times. It is now the site of the Government salmon hatchery.
30. "NQoíctEn," *smiling.* So called because the salmon were taken here in large numbers and the people were therefore happy and glad.

The social organisation of the StlatlumH differed somewhat according to the locality, the upper tribes approximating to the simpler, looser social system of the neighbouring N'tlakápamuQ, and the lower to the more complex, formal system of the Halkōmēlem tribes. For instance, we do not find among the upper tribes that threefold division of the commune into chiefs, nobles, and base folk, which prevailed among the Delta and Coastal groups and which characterised the lower tribes with Halkōmēlem affinities.

The office of headman or tribal chief among the StlatlumH was, as elsewhere among the Salish bands, theoretically elective but practically hereditary; especially among the lower tribes. The power and influence of a chief in any given tribe would seem to have depended upon his personal qualities and character, the more able and intelligent he was the greater and wider his influence; and one might lay it down as a general rule that the office of headman in a Salish tribe was held by the ablest, most intelligent and therefore the wealthiest man in the tribe. But the office in the hands of even the most influential and wealthy was hedged with many limitations, autocracy in any form being contrary to the spirit of Salish institutions. A Salish chief was rather a patriarch than a ruler. He was essentially the tribal father and stood to the tribe as a whole on much the same footing as did the several eldermen to their individual families; and it would appear that he rarely, if ever, entered upon any serious undertaking without first learning the opinions of the tribal elders and consulting with them.

This restricted power and authority of a Salish chief is clearly seen in the fact that he is not necessarily the head or director in all undertakings. For example, if he were not the most noted warrior of the tribe he would not direct warlike operations, or lead in attack or defence. This office and authority was always vested in a man noted for his personal prowess and skill in warfare.

It was the same in hunting. When a hunting expedition was set on foot it was not the chief who usually directed the movement, but the best and most successful hunter in the tribe. And thus it was with all public offices; the man most fitted for any particular post was invariably chosen by his fellows to fill it. But while all other offices seem to have remained elective, circumstances have tended to make that of the tribal chief hereditary. It is easy to understand that the son of a wealthy and influential chief stood a better chance to be his father's successor, other things being equal, than any other man of the tribe, more particularly when both father and son paved the way for this succession by a generous and discreet distribution of presents; and thus it is not difficult to perceive how an office originally elective became, as we now find it among the Coast and Delta tribes, practically hereditary.

It was this hereditary character of the chieftaincy which gave rise to that threefold social division of chiefs, nobles, and base folk, which prevailed among the lower Salish tribes. As soon as the office of Siám became hereditary the king or chief held a place apart from the rest of the tribe; and thus a princely caste is formed. The hereditary character of the chieftaincy among the upper StlatlumH and the consequent creation of a "royal" caste was scarcely accomplished when the disrupting influences of the white man began to make themselves felt; but among the lower StlatlumH the chieftaincy had become virtually hereditary, and the division of the tribes into chiefs, nobles, and base folk was the prevailing system.

We see another instance of the democratic character of the Salish mind in the position of the "divisional" heads. In many groups or divisions this headship received scant recognition. The office was generally held by a local chief whose wealth and influence excelled those of all others, or whose village was most populous and flourishing. The StlatlumH had two such chiefs, one for each group, the upper and the lower. These chiefs or divisional heads had nothing to do with the local affairs of the other villages. Their functions seem to be to represent the group or division as a whole and look after its interests. Each local community had its own headman and looked after its own affairs. In the earlier history of the Stock this local authority and direction of affairs would seem to have been shared by all the eldermen of the village or commune in common; or perhaps it would be more correct to say that the elderman of each family directed the affairs of his own household independently of all others; for the original social unit of Salish society was the family not the village commune. A primitive Salish community was a congeries of independent family groups, each ruled and directed by its own elderman. Every local community or village was composed of a greater or less number of these independent self-ruling families. These families comprised all a man's blood relatives on the father's side, commonly represented by three or four generations, all occupying the same permanent dwelling together.

Next to these family groups, thus constituted, were the kin-groups. These comprised all a man's relatives on both sides of the family, that is, all his mother's blood-kin as well as his father's, to the fifth or sixth generation.

MARRIAGE.

The marriage customs of the StlatlumH differed somewhat in certain features in the upper and lower tribes. At Qāaqtca (Fort Douglas) and the neighbouring villages the ceremony was conducted much as follows: When a boy had arrived at marriageable age his parents would ask him if he looked with favour upon any girl of their acquaintance. Upon his replying in the affirmative, and on learning his choice, they would select one of the eldermen of the kin-group to act as intermediary. It was not etiquette for the youth or his parents themselves to make the first move. This old man would pay a visit to the girl's parents and diplomatically sound them as to their willingness to accept his young kinsman as their son-in-law. If the girl's people considered the match desirable they would signify their consent and a day would be fixed for the visit of the bridegroom. The relatives and kinsmen of both parties now made preparations for the ceremony. These consisted chiefly in cooking large quantities of the choicest food. The parents of the youth opened their treasure chests and set aside such of their contents as was needful for the proper carrying out of the ceremony. The youth himself goes into the forest and cuts a large armful of the best firewood. This he takes home and places with the wedding gifts to be borne with him when he sets out for the marriage ceremony. Everything now being ready and the day appointed having duly come round, he sets out for the home of his father-in-law accompanied by his kinsfolk and personal friends. The party has been expected and the dwelling of the bride's father has been cleared and made ready for their reception. The girl's kinsfolk occupy the inner side of the dwelling, the outer is given up to the visitors. The ceremony is now opened by an elderman of the groom's party presenting the gifts of the bridegroom to the bride's father. They are placed in a heap upon the floor. He then offers the pile of firewood and says, "My young man brings you this firewood." Two eldermen of the bride's family now rise, go over to the bridegroom, take him ceremoniously by the arms, conduct him to their side of the house, and seat him next his bride. This constitutes the marriage. A feast is now indulged in, after which the bridegroom is free to depart and take home his bride or, if he chooses, he may stay a day or two with her family. When he is ready to depart he leads the way down to his canoe followed by the bride, who is conducted by some of the elders of her family. These may be of either sex. They place her in the bow of her husband's canoe, he taking the stern. The husband rewards them for their services with a blanket each. The day following, the parents and kinsfolk of the bride set out to pay the return visit to the parents and family of the bridegroom. Upon their arrival they make a distribution of presents, which custom demands shall not be less in value than those made to themselves by the bridegroom and his party. A second feast is now prepared and indulged in, which closes the marriage ceremonies and the visitors return to their home.

This was the practice and custom at Fort Douglas.

At LiluEtől the ceremony was not conducted throughout on quite the same lines. The bridegroom there never took his bride home with him. She was brought to him by her own people the following day, and handed over to him by two of the elders of her family together with the marriage gifts; and one of the elders then declared in a loud voice that the pair were man and wife. The girl's party thereupon left and returned home at once and did not join in the feasting that followed the arrival of the bride.

These customs were those observed by the chiefs and notables of the tribes. The marriage ceremony among the base folk was less formal. When a youth of this class was wishful to take a wife his parents sent a messenger to the girl's people to sound them. If the reply was satisfactory the young man's parents now made a formal visit to the girl's family leaving him behind. When they return they inform him that he is expected. The following night he visits the house of his future father-in-law. When he enters he is made welcome and invited to sit down with the family alongside of his bride. It is this formal inclusion in the family circle of the bride that constitutes the marriage. He stays with his father-in-law for at least four days. After that period he is free to go or stay as he chooses. Sometimes the man continues to live in the family of his father-in-law.

There are two features of special interest to be observed in the marriage ceremonies of the Stlatlumн. First the formal offering of firewood by the youth to his prospective father-in-law. This act signified that the younger man was subject to his father-in-law. It placed him in the position of "younger" man whether he was actually so or not. Among the Salish, or among other primitive peoples, age, real or imputed, confers authority, and all their social relations were conducted on the lines of "elder" and "younger." The elders rule and the younger people obey. This was the invariable rule. The second feature is that which constitutes the real act of marriage, the union of the bridegroom with the bride's family by the formal invitation to sit among them. This inclusion of the son-in-law within the family circle gives him all the rights of sonship and his offspring are regarded as belonging to his wife's family just as much as to his own. This and other customs would seem to point to an earlier social organisation, to a time when matriarchy prevailed.

Out of this union of the two families sprang the kin-group of the Salish tribes, to which I have referred before.

BARS TO MARRIAGE.

The only bar to marriage among the Stlatlumн that I could discover was sameness or nearness of blood. It was not lawful for any of near blood to intermarry. The only reason they could give for this bar was that it was considered "shameful" for those of the same blood to marry or have intercourse with one another. They follow our customs now generally and permit the intermarriage of first cousins. The old people expressed astonishment that first cousins, who with them are regarded as "brothers" and "sisters," should be permitted by us to intermarry.

A man among the Stlatlumн, as among other of the Salish tribes, might possess any number of wives, and a person of means and position in the tribe usually had several. Levirate prevailed among them, a man's widow or widows going to his surviving brother. These persons stand in the relation of "skălpa" and "kălapEm" to each other. There is no equivalent in English for these terms.

It was also customary for a man to marry all his wife's sisters, who are always younger than herself, the eldest daughter being always the first to be disposed of in marriage among primitive people like the Salish. He might do this in her life-time or after her death if she died early. If he had not taken them to wife while she lived he could not marry them or any other woman for at least a year after her death. A man might also wed a widow other than his brother's wife, and if she had daughters these also became his wives provided they were not akin by blood to him. A widow had the privilege of bestowing her own hand in a second marriage if she had no brother-in-law to claim her. Widows and widowers might intermarry if they desired after the customary lapse of time.

DWELLINGS.

The dwellings of the Stlatlumн were of three kinds, the long-house, the subterranean or winter house, and the temporary summer lodge. The latter were more common among the upper tribes, and in structure do not appear to have differed essentially from those used by the interior Salish, descriptions of which have been given by Dawson, Feit and others.

The subterranean winter dwelling, called in the Lilūetṓl tongue "ḗcitkEn," of which no specimen now exists, was, as far as I could gather from the descriptions of my informants, similar in construction to this class of dwelling among the interior Salish which has also been described by earlier writers.

The tcítūQ, or house proper, was, as I have said, of the long-house style. These dwellings were found mostly among the lower StlatlumH, who would appear to have borrowed them from the neighbouring Halkōmḗlem tribes, this kind of structure being characteristic of the coastal rather than of the interior tribes, where the climatic influences largely differed from those prevalent on the coast.

These houses do not appear to have been as long generally as among the Delta tribes, where continuous structures of from 100 to 200 yards were not uncommon fifty years ago.

Among the StlatlumH the internal structure of these houses differed from that of any I have described heretofore. Each family group was customarily divided off from the rest by permanent wooden partitions. As the Smētlā́s, or winter ceremonial dances, were not practised by the StlatlumH, they had no need of the long open structure of the Halkōmḗlem and coastal tribes, which stretched from end to end without permanent divisions, and often without any divisions whatever. Each "family" was entitled to a space 60 feet long. The width of the building varied with the natural condition of the site, ranging from 25 to 50 feet. The style was usually of the half-gable or single slope type. The roof was always of very slight pitch, being customarily used as a platform upon festive and ceremonial occasions. There were two entrances, a back and a front one, for every two compartments. These latter were divided off from each other by a passage-way about 6 feet wide. In the walls of this passage-way, at about the centre, was a doorway on each side which gave access to the compartments. Within each of these compartments there dwelt usually four fire-groups, one to each corner. These fire-groups made up the family, and were invariably of blood-kin to each other. They were sometimes made up of four generations of the same family, sometimes by a group of brothers with their wives and children, sometimes of a father and his married sons, and sometimes partly of one and partly of the other; but all were related to one another by blood ties, and no marriage was permitted between them.

Among the southernmost of the StlatlumH tribes these houses contained platforms around the sides of the interior, as among the Halkōmḗlem. These served as beds by night and as lounges by day. Shallow cellars were dug beneath them, in which was stored away the winter's supply of roots. All round the walls above the beds "'nk·ailakā́amtEn," or hanging shelves, were erected, on which the household's supply of meat and fish was dried and smoked.

Among the middle and upper StlatlumH the bed platform was not in use. The beds here were formed of layers of fir branches arranged in a circle round the fire. Upon these the people lie with their feet towards the fire.

Their coverings, when they were wealthy enough to possess such, were blankets made from the hair of the mountain goat or from the skins of small animals sewn together. Deer, bear and elk skins were also in use among them as winter coverings. Among the lower tribes, where the raised platforms are found, layers of reed or swamp grass mats composed the beds. These are in common use to this day, laid directly upon the floor of their houses or on the bedsteads of the whites.

FOOD.

The food of the StlatlumH tribes was much the same as that of their neighbours. It consisted in the main of salmon, fresh and dried, supplemented with the flesh of such animals and birds as they could snare or kill, and the wild fruit and edible roots of their habitat. Both the latter were stored away in considerable quantities for winter use, the roots in shallow cellars under the bed-platform, and the berries preserved in a variety of ways. Some were dried after the manner of the currants of commerce, some were pressed into solid cakes, and others were treated in the manner described in my remarks on the food of the Síciatl. In the salmon season large quantities of these fish were caught and sun-dried or smoked, and afterwards stored away in elevated cupboards or storehouses. These structures were erected apart from the dwellings, their floors being raised from 4 to 6 feet above the ground, to preserve their contents from the camp dogs and other prowling animals. They smoked and dried the flesh of the larger game animals when their supplies exceeded their temporary wants. In the seasons when the salmon were plentiful they extracted large quantities of oil from them, storing this away in bottles made from the skin of the smaller salmon themselves, from the larger guts of their game animals, or from the sounds or air-bladders of fish. Their method of extracting the oil closely resembled that followed by the N'tlakápamuQ, which I described in detail in my report on those tribes. They also dried and powdered the flesh of the salmon after the oil had been extracted, storing this also for winter use.

HOUSEHOLD UTENSILS.

In the matter of domestic utensils, I did not learn that these differed in any essential features from those in use among the neighbouring divisions, which I have described before. They had the usual assortment of cedar and other basketry, and bowls and spoons of maple, cedar and horn. They served their food on mats and platters, and in large communistic bowls.

DRESS.

The old-time clothing of the StlatlumH resembled that of their neighbours, the upper tribes using garments similar to those of the Thompsons, and the lower tribes similar to those of the Halkōmēlem. A blanket was the ordinary and only covering for males, and this was often dispensed with. Women commonly wore shirts or shrouds of dressed hide, or petticoats of woven slŏwē (inner bark of the cedar [*thuya gigantea*] beaten fine). The upper tribes who lived within the "dry belt" possessed, and commonly wore, moccasins. The lower tribes went barefoot, such foot-gear being unsuited to their wet climate.

PUBERTY CUSTOMS.

The puberty customs of the Salish differed almost from tribe to tribe. The Stlatlumн customs seem in many features to be peculiar to themselves, and the period of seclusion differed even in the upper and lower divisions, the former being much longer than the latter; the one approximating in this respect to the Thompsons and the other to the Halkōmēlem. This is probably due to the differences in the climate of the two groups.

When a girl reaches puberty—that is, at the appearance of her first catamenial flux—her mother takes her out and builds her a small lodge or temporary shelter. In the interior of this a hole is dug several feet deep, the usual depth being the level of the girl's breasts. In this the girl squats while her flux passes. She occupies this structure for at least four days, generally for a longer period, such as eight, twelve or twenty days, or even a whole month, and sometimes as long as six months. For the first four days the girl practically fasts, and throughout the whole period of her seclusion abstains from fresh meats of any kind. There was a two-fold object in this abstention. First, the girl, it was thought, would be harmed by the fresh meat in her peculiar condition; and second, the game animals would take offence if she partook of their meat in these circumstances. Should a pubescent girl eat fresh meat, it was believed her father's luck as a hunter would be spoiled thereafter. The animals would not permit him to kill them; for it was held that no animal could be killed against its own wish or will. Indeed the Indian looked upon all his food, animal and vegetable, as gifts voluntarily bestowed upon him by the "spirit" of the animal or vegetable, and regarded himself as absolutely dependent upon their goodwill for his daily sustenance. Hence his many curious customs and observances to propitiate the "spirits" and secure their favour and regard. All his food taboos are conceived and carried out with this intention.

During the whole period of her seclusion the girl busied herself in various ways—by spinning yarn or picking off the needles from fir branches, and by frequent baths and scrubbings and walks in the forest, where she was supposed to hold converse with the "spirits" of the trees, in particular that of the red-fir, whose branches were a sovereign remedy against sickness and "bad medicine" of all kinds.

When the period of her seclusion was over she had to be formally purified by a Shaman; in other words, her "bad medicine" had to be taken from her. This was done by the Shaman marking in red paint the symbol of his *snam* or "familiar spirit" upon her blanket or face.

In my description of the puberty customs of the StsEēlis, I pointed out that the women of that tribe employed certain euphemistic terms to indicate their periodic condition. The same practice is found among the StlatlumH women. The first menstrual period is called "tlṓgamug." The word has reference to the hole in the ground beneath the menstrual lodge. The second is called "t·lōkaúcim," *putting the knees together*; and all after periods, "älitska," *going outside*, which refers, of course, to their seclusion in the menstrual lodge, it being customary for a woman to seclude herself for four days at these periods. This latter term is a modified form of the regular word for "outside." In some villages the term "zṓmEt," *abstaining from fresh meat*, takes the place of "älitska."

Boys underwent a different kind of seclusion upon reaching puberty. Among the upper tribes a youth retired to the woods or mountains and sought his *snam* or *sulia*, every man possessing such among these tribes as among the Thompsons.

Among the lower StlatlumH only those youths who had a desire to excel in any particular thing underwent the regular kwāzā́ntcūt, the ordinary youth possessing no personal totem. In this respect they followed the custom of some of their Halkōmélem neighbours.

Mortuary Customs.

The burial customs of the Salish, like their puberty and other customs, differed from tribe to tribe. There are several peculiar features among the StlatlumH. When a person died, the corpse was handed over to the wutltzétca, or funerary shaman, who washed and prepared it for burial. This individual was regarded as immune to the "bad medicine" of dead bodies by reason of his mystery powers. The body was customarily washed all over, the hair combed and tied back, the face painted, and the head sprinkled with the down of bull-rushes, which was potent in checking the evil influences attending corpses. The lower limbs of the corpse were then doubled up and the knees brought up to the chin, and the whole body covered and tied up in a blanket. If the corpse was that of a woman, it was prepared for interment by a female shaman.

When the corpse is ready for burial, a long pole is run through the binding cords, the ends are raised on the shoulders of two or more elderly persons, and the body is thus carried to the burial grounds. The friends and relations of the dead person follow the corpse to the grave, the procession being always headed by the shaman in charge. When they arrive at the grave-yard, a hole is dug in the ground, the StlatlumH proper practising inhumation in the disposal of their dead. The hole or grave is then carefully and ceremoniously brushed out by the presiding shaman with branches of the mystic red-fir. This act constitutes a veritable consecration of the grave, and drives off all evil influences. The body is then lowered into the hole and covered up with soil, a large stone being placed at each end of the grave to mark the site.

After the inhumation of the body, the burial party returns to the house of the nearest relative of the deceased person, and the women and girls of the household are then instructed to prepare the mortuary feast, and the boys are bidden to go and gather firewood. Invitations to the feast are also sent out.

In making these, preference is given to widows, widowers, and orphans, or to those who are mourning the loss of some dead relative. When the guests have assembled and the food is ready, the men are first fed, being waited upon by the women, who afterwards partake of what the men leave. At the close of the feast, the elder of the household opens the family treasure chests and distributes therefrom blankets and skins to those who have actively assisted in the mortuary ceremonies.

The next four days are spent by the members of the household of the deceased person in fasting, lamenting and ceremonial ablutions. At daybreak on the fifth morning they all go outside and have their hair cut by the mortuary shaman. He always cuts that on the right side of the head first, the "right" side being the more honourable in all things in StlatlumH opinion. When the ceremony of hair-cutting has been performed, they return to the house and paint their faces and oil and tie up their hair, put on a more cheerful countenance, and, if the family or household be well-to-do, indulge in a second feast.

This cutting of the hair of the surviving relatives of the deceased persons signifies that the family is "in mourning."[1] The severed hair among the StlatlumH was always gathered up and tied into a little ball and taken into the forest and fastened to the branches of a red-fir tree on its eastern side.

MORTUARY TABOOS AND PROHIBITIONS.

There are various taboos and prohibitions in connection with the dead. The name of the dead person must not be uttered. This is not so much out of regard to the feelings of the surviving relatives, as on account of the mystic connection which is supposed to exist between names and their owners. To utter or use the name of a dead person is to affect and disturb his ghost or spirit, and draw it back to its earthy haunts. This is inimical both to the ghost itself and to the person using the name, and thus attracting the ghostly influence. It is, therefore, a thing to be avoided. Hence the taboo. Time is necessary to remove this danger. After a person has been dead a year or more his name can again be used.

Widows, widowers, and orphans, had certain restrictions placed upon them in the matter of food. In the case of the widow, she might eat no fresh food for a whole year. The other members of the deceased person's family abstained from fresh food for a period of from four days to as many months. The widow might not sleep on the customary bed or sleeping-mats; she must make a special bed for herself of red-fir branches, and also wear a head-wreath or "nĔmōk" of the same material for a certain period of time. She also wore bands or thongs of buck-skin round her neck, wrists, and ankles. These were put on at the time of the hair-cutting. The object of the former was to prevent coughs and other lung troubles, and of the latter, to keep off rheumatism.

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[1] It is noteworthy and curious that no two of any of the tribes which I have had thus far under study, followed the same custom with regard to the disposal of their severed hair.

In the case of the widower, he likewise abstained from fresh meats for some time. The period of abstention varied somewhat with the age of the person—the younger the man, the longer his abstention. Elderly people might shorten the period considerably, and might eat fresh salmon as soon as the first of the salmon "run" was over, and the fish had arrived in numbers, when there was no danger of their being driven away.[1]

A young widower must also be careful to refrain from sexual intercourse for a year, the more particularly if he possessed esoteric or mystery powers. It was not unusual for a young widower to go apart into the forest by himself for a year after the death of his wife, and purify himself from the death defilement, and seek mystery powers. To effect these objects, he would build himself a "'nk·úlzätEn" or *sweat-house*, or a "'ntcEplĕ́kEctEn" or *hot bath*, by the side of a stream, and drive the "bad medicine" of his dead wife out of his body by repeated sweatings or hot baths.

The 'ntcEplĕ́kEctEn was thus constructed. A circular hole was dug, several feet deep, and from two to three feet in diameter, at the edge of a stream or lake. This would be lined with branches of the mystic red-fir, and while the water from the stream or lake was percolating through the sand and filling the hole, the man would be heating stones in a fire close by, and plunging them into the 'ntcEplĕ́kEctEn to make the water hot. He would then sit in this hot bath up to his neck for a time, after which he would plunge into the cold waters of the stream or lake. Sometimes he would take a heavy stone in his hand and walk into the water till it rose above his head, and continue thus walking on the bottom of the lake till want of breath forced him to drop the stone and rise to the surface. He would continue these practices day after day, and sometimes by night as well. He would also purge his stomach by enforced vomitings. This he effected by thrusting a "wät·lik·tEn" or *stomach stick* down his gullet.

Young widows had also to undergo continuous ceremonial washings or cleansings. One object of this was to make them long-lived, and another, to render them innocuous to their second husbands. For should a widow marry shortly after the death of her former husband without going through a course of ceremonial cleansing, it was believed that her second or subsequent husband's life would be very short.

Birth Customs.

When a woman was about to give birth to a child, she or her husband, or both together, built a small lodge near by the general dwelling-house. When her labour overtook her, she retired to this lodge, in company with four elderly women, who acted as her midwives. After the child was born, it was customary for the friends of the man and his wife to visit the lying-in-lodge and see the baby, and the husband was always expected to make the visitors presents on this occasion to mark the event.

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[1] Salmon were supposed to be peculiarly susceptible to the influence of dead bodies.

The mother and child remained in the lodge for at least four days, and if the weather permitted, this period would be extended to eight or twelve, or twenty days, or to some other multiple of four, the Salish mystic number.

SALMON CEREMONIES.

When the "sock-eye" salmon (*Oncorhynchus Nerka*) or "laúwa" *run* commenced, the first salmon caught was brought reverently and ceremoniously upon the arms of the fisherman, who never touches it with his hands, to the "wā-tcḗoQälōc" or *seer*, the term meaning "he went to see," who always conducts the salmon ceremonies among the StlatlumH. He lays the fish on the ground upon a layer of fresh red-fir branches. He next selects one of the elders of the tribe to assist him. These two now sit down and arrange before them on the ground a bundle of short rods. These rods all bear the "mystery" names and marks, and represent the elders, of the tribe. The rods are arranged in the order of the ages of the men they symbolise. The assisting elder now hands the rods in turn to the wā-tcéoQälōc, who lays them on the lateral fin of the salmon on its right side, the lateral fins being regarded as the salmon's hands. He then formally introduces the rods to the salmon by name, saying tE kaíetl, So-and-So, desires to welcome you and shake your hand.

When all the elders have thus been vicariously introduced, and the salmon made welcome to the tribe, it is then ceremoniously boiled, and a small portion of its flesh given to each person present. This done, everyone who has taken part in the ceremony presents a salmon to the wā-tcéoQalōc. The fish are placed on the ground before him, and as each man lays his salmon down the seer's assistant calls out the tally, saying: "This is So-and-So's salmon." When all have presented their salmon, the fish are straightway cooked, and the first salmon feast of the season is indulged in by the whole tribe, with the exception of those who are debarred for various causes from eating fresh salmon. After the feast is over, they all take part in a joint ceremonial dance, the wā-tcéoQälōc leading and directing the performance. He also makes formal thanks to QaQals, the tribal demi-god or culture-hero, for bringing the salmon to them, raising his arms aloft and casting his eyes skywards as he does so.

From this time onwards throughout the season, anyone is free to catch as many salmon as he likes; but no one would dream of taking a "laúwa" salmon before this ceremony had been performed. The StlatlumH regarded the "laúwa" or *sock-eye* salmon as the chief of salmon, and hold no ceremony in honour of the other four or five species that frequent their waters.

The significance of these ceremonies is easy to perceive when we remember the attitude of the Indians towards nature generally, and recall their myths relating to the salmon, and their coming to their rivers and streams. Nothing that the Indian of this region eats is regarded by him as mere food and nothing more. Not a single plant, animal or fish, or other object upon which he feeds, is looked upon in this light, or as something he has secured for himself by his own wit and skill.

He regards it rather as something which has been voluntarily and compassionately placed in his hands by the goodwill and consent of the "spirit" of the object itself, or by the intercession and magic of his culture-heroes; to be retained and used by him only upon the fulfilment of certain conditions. These conditions include respect and reverent care in the killing or plucking of the animal or plant and proper treatment of the parts he has no use for, such as the bones, blood, and offal; and the depositing of the same in some stream or lake, so that the object may by that means renew its life and physical form.

The practices in connection with the killing of animals and the gathering of plants and fruits all make this quite clear, and it is only when we bear this attitude of the savage towards nature in mind that we can hope to rightly understand the motives and purposes of many of his strange customs and beliefs.

TOTEMISM.

A study of the totemism of the Salish tribes, besides being extremely interesting in itself, throws, I believe, much light upon, and gives us a deep insight into, totemism in general. A comparative study of the totemism of the tribes of this Continent and that of the natives of Australia has convinced me that we should no longer regard totemism as something peculiarly characteristic of the matrilineal stage of savage society. Indeed the insistence on this point is causing some of the foremost students of savage sociology to call in question the propriety of making *all* savage races pass by natural evolution through Matriarchy to Patriarchy and the village commune. They are inclined to see in the earlier stages two equally original and independent forms of social organisation. Let this be as it may, taking the American evidence on totemism as a whole, it seems to me impossible to doubt that totemism is as much a feature of patriarchy, and the village commune, as of matriarchy. It must be understood that I speak of totemism in the "American" sense of the term. I am unable to regard it any longer in any other sense. Totemism to me is primarily and essentially a "religious" phenomenon, the direct result and outcome of the savage's mental attitude towards nature. The social aspects of totemism I regard as something very secondary and incidental, which attained such importance as they possess in savage organisation only on account of their obvious convenience in classifying and distinguishing one kin group from another.

If totemism were primarily and essentially, as some students hold, a social phenomenon originating only in, and properly belonging to, the matrilineal stage of savage society, we ought to find it decaying and falling into desuetude as matriarchy passes into patriarchy and the village commune. But we do not, at least in this country, and apparently not elsewhere. For while the transition from matriarchal to patriarchal organisation has effected certain superficial changes in the social aspects of totemism, the religious or essential aspects have remained unchanged and unimpaired throughout, and are as active and far-reaching in their influence in patriarchy and in the village communism of such tribes as the Salish, as in the strictly matrilineal organisation of the Haida or Tlingit. And we find the same thing in Australia. The "religious" or "magical" aspects of totemism there are just as strong and pervasive in those tribes that have patrilineal descent as in those having matrilineal descent. This could not be, I contend, unless the basal concept underlying the various phases or aspects of totemism were of the nature I claim it to be, and had its origin in that attitude which the unsophisticated mind everywhere takes towards the mysterious and the awe-inspiring in nature, which affects the savage as much in his later social stages as in his earlier.

It does not seem to me scientific to regard what is demonstrably an unstable, and, *therefore*, a secondary phase of totemism as its essential and primary characteristic, and overlook another co-existing with it, which is clearly more constant, and, therefore a more essential feature, inasmuch as it persists through all the social changes, from matriarchy to patriarchy, and from that, again, to the village commune, which savage society undergoes, and is the only feature of totemism which does so. We find something equally common and equally essential to the totemism of the village Salish, the patrilineal Sioux and the matrilineal Haida. This, obviously, is not its social character, for the three stocks have each a different social organisation; but it *is* its religious character; for the three hold and share equally a belief in tutelary spirits, which belief is seen to lie at the base of, and give life and meaning to, the totemism of Haida, Sioux, and Salish alike.

Ethnological research here has made it clear that totemism, in one form or another, is found among all the native races on this Continent; and it has further revealed the fact that its social aspects vary with the social organisation of the different stocks. Amongst all, the personal or individual totem or tutelary spirit is in evidence in a greater or less degree. It is this prevalence of the personal totem, the *nagual, manitou, sulia, snam, waqube,* or whatever it may be locally called, that has led those American students who have made a first-hand study of the subject to regard group totemism as a natural extension of personal totemism. It is found among all the Salish tribes of British Columbia, and I cannot myself entertain the least doubt that it is the true basis and origin of their group totemism. For in the tribes of the interior, where group totems are wholly unknown, *every* individual is said to possess a personal totem; and it is only when we come to these Salish tribes that possess hereditary group totems, which are demonstrably here, at least, a later development of the nagual, that we find the personal totem less common and possessed by certain members of the tribe only. This seems to be the case everywhere. In those tribes where the kin or family totems are common, the personal totem is correspondingly rare. This suggests to my mind that the personal totems have been superseded by the kin or group totems on account of the changes which have taken place in the social organisation of these tribes. For among the tribes possessing kin or group totems we find a social system different from that prevailing among those possessing the nagual only. Wherever the group totem is found, we see hereditary chiefs and distinct castes, medicine and secret societies, crests and such-like social features, all or most of which have their bases and find their support in the group or paternal totems. A study of the group totems of our coastal tribes makes this very clear. As long as the totem is personal it is invariably regarded by its owner as an ever-ready, active, ghostly helper, to be called upon for help and protection, in all emergencies; but when it becomes by inheritance a group or kin totem, we find it losing its active tutelary character and degenerating into what is little more than a mere crest or symbol of kinship.

The personal totem or nagual is thus obviously the earlier in time. This among the Salish is invariably acquired in dreams and visions, and the group totems of these tribes have without doubt a similar origin although their acquisition is commonly otherwise accounted for by the Indians themselves. Among certain of the tribes, I find the group totem is not uncommonly regarded as the semi-human, semi-bestial ancestor of the group who lived in the days of the "S'p'tắkwᴇtl," the *Alcheringa* of the Salish. It is noteworthy, I think, that we should find the group or kin totems of tribes organised on the village commune basis originating (according to the tribal myths) in the same way as the group or kin totems of tribes having matriarchal organisation are believed to have originated; and unless it can be proved that the former have borrowed the idea from the latter—and in the case of the Salish I am doubtful if it can be so proved—then, as this seems an almost universal way of accounting for the group totem, a common explanation should underlie this common belief. I shall presently offer what appears to me the true explanation of this prevalent belief among savage peoples, and show, from their known attitude towards nature, how inevitably they are led to hold such a view.[1]

As I have stated, dreams and visions are the invariable source of the personal totem of the Salish; for even when a totem is transmitted from one to another, as it sometimes is, the totem appears to the person or persons upon whom it has been bestowed in a dream or vision, acknowledging the bond and promising protection. The dream or vision is the proper and common mode of communication between the guardian spirit and its *protégé.*

The manner of personally acquiring a totem among the Salish appears to be the same everywhere. The seeker, who is generally a youth, but sometimes a man of mature years, who has the attainment of some special object in view, goes apart by himself into the forest or mountains and undergoes a more or less lengthy course of "training" and self-discipline. This course among the Halkōmēlem tribes is called "KwākwaiyísEt," among the StlatlumH, "Kwāzắntcūt," and by other terms in other divisions, and continues for a period of from four days to as many years according to the object the neophyte has in view. Those taking the longer course are generally men seeking shamanistic or some other special mystery powers. Prolonged fasts, bathings, forced vomitings and other exhausting bodily exercises are the means adopted for inducing the mystic dreams and visions. With the body in the enervated condition which must necessarily follow such treatment, the mind becomes abnormally active and expectant; and dreams, visions and hallucinations are as natural to the novice in such a state as breathing: and we can readily understand how real to him must seem the vision of the looked-for spirit, and how firm his belief in its actual manifestation.

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[1] If the "moiety," "class," and "sub-class" terms of Australian savage society are of totemic origin, as Mr. Andrew Lang contends, and as seems probable on the analogy of the names of our American "moieties" or "divisions," they would appear to have wholly lost their original significance, according to Messrs. Spencer and Gillen, and would thus be a case in point in my argument, that the farther we get away from the *personal* character of the totem the less religiously significant it becomes, and the more purely social. I contend, therefore, that a study of totemism from the social point of view will never reveal to us its origin and true import.

The psychical effect of this belief upon some temperaments must be very great, for it enables them to undertake and accomplish feats of abnormal strength, agility and endurance: and gives them at times, besides a general exaltation of the senses, undoubted clairvoyant and other supernormal mental and bodily powers. No one, I believe, is less a conscious humbug than the average Indian "Doctor," though it has been common to regard him as such. His belief in the efficacy of his own practices and in the power of his nagual to effect the cures he undertakes, is as sincere as the belief of his more sophisticated brother in his trained professional skill and in his powerful drugs. "Captain Paul," my chief informant and assistant among the StlatlumH, gave me the following information with regard to the acquisition of one of his own personal totems, or *snam* as the tutelary is called in this division. He possessed several *snam* some acquired by direct personal effort, others by transmission from one of his uncles, who was a noted Shaman:—

"One day, when I was a young man," he said,[1] "undergoing my 'Kwāzắntcūt,' seeking superior hunting powers, I had a vision in my waking state. A being in the form of a man came to me with hands outstretched, holding in the one a human heart, in the other an animal's heart. He bade me take them and eat them, saying it was the food he ate. I raised my hands to grasp them, but the human heart disappeared, and I seized only the animal heart, which I devoured. The spirit now gave me two leaden bullets, and told me to aim always at the hearts of all the game that I fired at. When he had given me these instructions he disappeared and where he had stood a moment before I saw now only my rifle. By this I knew that the spirit of the rifle was my *snam*. From that time onward, whenever I shot at an animal I aimed at its heart, which always appeared to my sight many times larger than it really was, so that I had no difficulty in hitting it. I could also follow with my naked sight the path of my own or other people's bullets through the air. I often stood behind my father or my brother when they shot, and told them the direction their bullets had taken, where they would strike, and whether they would bring down their game or not." I was unable to verify the truth of these statements by independent testimony, as his father was dead, and his brother, though still alive, was speechless from paralysis; but I may say I made inquiries as to my informant's skill in shooting, and found that in his earlier years he was a noted shot. Indeed, one of his many names referred to his skill in this direction, "Ā-ZắqEn," meaning *good marksman.* It was his belief that if the *snam* had not withheld the human heart from him, and he had eaten it as well as the other, he would have been a great warrior, and could have shot his enemies through the heart as easily as he shot his game.

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[1] I have not written the statement in the exact language he used, but have been careful to give the true sense of his words; his knowledge of English making this very easy.

Touching this and other abnormal powers he formerly possessed, he said the reason that he no longer possessed them was partly because he had given up "exercising" himself since his conversion to Christianity, but more particularly because his present wife, who had been the widow of another man, had been careless about carrying out the purificatory ceremonies after the decease of her former husband, who had been a white man. She had also married him within a few months of her first husband's death. This, which is contrary to the mortuary regulations, and her "bad medicine" consequent upon her non-purification from the death defilement, robbed him of his mystery powers.

This statement concerning the loss of his *snam* powers is thoroughly in keeping with the practices and beliefs of the Indians, and was told me with the naïve sincerity of a child. Though "Captain Paul" has outwardly long given up the practices of his forefathers, and is one of the chief catechists of his Church, his belief in *snam* powers is at bottom as firm and real as ever it was. A little incident he related to me regarding the source or origin of the name of one of his grandchildren makes this very clear. When the child was about a year old and they were thinking of giving it one of the ancestral names, he had a dream or vision, in which a being in human form stood before him and told him to give the name "Sk·ăcĕ́nak·" to his grandchild. This being was the spirit of the world which, though ancient, yet never grows old and decays, and the name was his secret or mystery name, the bestowal of which upon the child would make her partake of the immortal character of the world, and in the estimation of her grandparents, prevent her from growing old and decrepit. Needless to say, the name was duly bestowed upon her, in spite of the fact that she possessed already a baptismal name; though few, if any, outside the immediate family circle, besides myself, know of it or its origin and significance. It was not till "Captain Paul" and I had spent several weeks in each other's company, and I had won his confidence and esteem, and he had bestowed upon me one of his ancestral mystery names, thereby relating me to himself, that he gave me the above, and other "esoteric" information, concerning the abnormal sight powers he claimed to have formerly possessed. I do not, for my own part, doubt his possession of them for a moment; the known phenomena of hypnotism make them quite possible, and fully justify one in holding such a belief. That some of the old Indians had power to exalt their senses and faculties by invocation of their *snam* is quite clear, I think, from the feats they frequently attempted and accomplished. For example, Paul's father was a noted mountain-goat hunter. Besides his bow and arrows, with which he usually brought down the game, he also carried with him a long, stout climbing-stock, called in the native tongue tlEákätEn. This was a plain pole, twenty-four feet long, which was employed in assisting him up and down the face of the steep and bare cliffs, which are the favourite haunts of the wild goat. Upon its upper end a figure or symbol of one of his *snam* was carved. Paul said that when his father, who was a famous climber, came to the face of a precipitous cliff up which it was impossible to climb in the ordinary manner, he would address or invoke this figure, which had the form of a bird, asking it for help and power to ascend the cliff before him. Thereupon, Paul affirmed, a living bird of the species of the symbol on the climbing-stock would be seen to fly around his father's head and settle upon the top of the stock. His father, now sure of his *snam's* aid, would then set the foot of his climbing-pole three or four feet from the base of the cliff, grasp it firmly in both hands one above the other, throw out his feet against the cliff, and thus walk up its face by hauling himself up hand over hand on the pole. When he reached the top the bird would disappear again.

To thus climb the straight or overhanging face of a cliff anywhere from twelve to twenty feet in height, with the base of one's climbing-pole standing on the bare, hard rock, was no easy task, as one may easily see, and there can be no doubt that the success of the climber was largely due to his confidence in the help and support of his *snam*, and the consequent exaltation of his faculties.

Getting down the face of a cliff was accomplished in the following manner: The climbing-stock was first let down and held in an upright position, then the hunter skilfully slid down the pole without letting it sway out of the perpendicular. This does not appear to be so difficult as climbing up.

Among the upper tribes of the StlatlumH, everyone, as among the Thompsons and other interior tribes, acquired or possessed a *snam* or personal totem; but among the lower tribes the personal totem had largely given way to the family or kin totem, and only those who desired to excel in some pursuit acquired and possessed *snam*. I shall deal with the reasons of this presently, when I come to speak of the origin of names and their relation to totemism. I desire first to treat of the *snam*, which are indirectly acquired by transmission from one person to another. We have never before been told how this was done. The gift or transmission, I learnt from "Captain Paul," can only be made or effected by certain persons, such as Shamans, or those who possess great mystery power. One of Paul's maternal uncles was a person of this character. When Paul was a youth this uncle wished to make a disciple of him and initiate him into the "mysteries." To this end he conferred upon him one of his own *snam*. The transmission was made thus: The uncle took the symbol of his *snam*, which in this case was a dried bird's skin, and bade his nephew breathe upon it. He then blew upon it also himself, uttered some "zūwén" or mystic words and the dried skin seemed to Paul to become a living bird, which flew about them a moment or two and then finally disappeared. Paul was then instructed by his uncle to procure that day a bird's skin of the same kind as his uncle's and wear it on his person. This he did, and the following night he had a dream, in which the *snam* appeared to him in the shape of a human being, disclosed to him its mystic name by which it might be summoned, and promised him protection and mystic power. The essential feature of this transmission of the *snam* was the blowing or breathing upon it. Without this, according to Paul, no transmission could take place. There is mystery power in the breath of a person. It is the manifestation of the spirit within him, and partakes of its nature. A person's breath conveys both good and evil influences. For example, a man seeking mystery power should never permit the breath of a woman to pass upon him or enter his lungs; it would nullify all his efforts, and effectually prevent the acquisition of the powers he sought if he did so. The verb "to revive" among the StlatlumH shows how closely and intimately the breath and life or spirit of a person was connected in their eyes. The term is "'npēralṓcEm," and means in English "to sigh or breathe *in* the spirit, and open the eyes."

This method of acquisition of the totems while it makes perfectly clear the possibility of transmission of personal totems, and shows us that there is nothing inherent in the nature of such to prevent their being passed on from one individual to another, does not seem to suggest that this was the way in which the kin or group totems originated—at any rate, among these tribes—and we must consequently look in some other direction for the evidence on this head. This evidence will, I think, be found in the name systems of these tribes. This subject is so important in its bearing upon totemism, as well as being deeply significant in itself, that it calls for treatment under a special heading. This I have ventured to term *nomenology*.

NOMENOLOGY.

In my paper on the "Origin and Import of Totemism"[1] I took occasion to point out what my studies had led me to believe was the true source of totem group names. My investigations among the Salish during the past two years have confirmed me in this belief; and the evidence I have been able to gather on this head, taken in conjunction with that presented by Messrs. Spencer and Gillen from the Australian field, goes far, I think, to establish the view that in the name systems of savage races we find the true source of totem group-names. It is certainly noteworthy and significant that two races so widely separated and so dissimilar as the natives of Australia and those of this Continent should have so many points in common in their system of naming. Both have hereditary "secret" or "mystery" names, which always refer to some event in the lives of the ancestors of the groups or families, or to the supposed origin of the founders of these.

Among the StlatlumH proper, and, according to all my informants, among *all* the interior Salish tribes, names were derived from two sources, "tel snam" and "tel stāz"; that is "from guardian spirits" and "from nick-names." The latter were comparatively rare, the main source being the *snam*. The same person might possess a name, or even several, derived from both sources. One curious fact about the *stāz* names is that they were hereditary. I call attention to this fact, because it shows us in an unmistakable manner that words or terms which have once been used as names are invested thereby in the unsophisticated mind with a special character and significance. They partake in a mysterious way of the nature of those who first bore them. I cannot say to what extent *stāz* names were employed apart from their original signification. They would appear to be generally given to those who resembled in some way the person who originally bore the name. One of Paul's names, he informed me, was a *stāz* name given him by his maternal grandmother. The name had been first borne by a son of hers, whom Paul seemed to recall to her. This son was a famous shot with the bow and arrow, and the name signified "good marksman."

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[1] *Trans. R.S. Canada*, 2nd Series, vol. ix, sect. ii, 1903.

As a rule, *stāz* names were descriptive of some characteristic of the person bearing it, either mental or bodily, and generally the latter: such as "'ntlṓtcalōc" = *squint-eye*, "'nkwā́lālōc" = *staring-eye*, or the plural form, "'nkwᴇlkwā́lālōc" = *staring-eyes*.

Another curious fact about these *stāz* names is that they are never given to women. A woman's name is always an hereditary, family, or a self-acquired *snam* name, or both. She is never known by a nick-name.

All the hereditary names among these tribes are said to be either *snam* or *stāz* names. Each family possessed its own list or stock of names. Those belonging to, or which had been borne by, distinguished individuals of the family were the names most commonly used. They might be drawn from either the mother's or the father's side of the house. A large proportion of these names are animal or plant names; others are taken from inanimate objects or from natural phenomena.

Among the lower Stlatlumʜ, Halkōmélem and Coastal tribes, names were derived from many sources. These, according to Paul, might be any or all of the following: "tel s'úlia," *from the dream spirit*; "tel ckṓkwa," *from grandmothers*; "tel smḗtla," *from dream dances*; "tel zūwḗn," *from mystery men*; "tel Qals," *from Qals*; "tel s'p'tákwᴇtl," *from mystic beings*; "tel stāz," *from nick-names*; "tel Siam," *from the "pollatch"*; "tel cwolā́am," *from Shamans*; and from several other sources.

These family or hereditary names among all the tribes, but especially among the Delta and Coastal divisions, were regarded as among the most sacred possession of the kin-group and were most jealously guarded. Men who, like Paul, were related by consanguineal or affinitive ties in different villages or groups, had distinct names in each.

Among the interior tribes, where the group-crest or totem was apparently unknown, there do not appear to have been any group names; but when we reach the lower Stlatlumʜ, the Halkōmélem and Coastal tribes, where the personal totem or *snam* has largely given place to the group totem, the kin-name, or what is the same thing, the kin-crest, is everywhere common.

Whatever may have been the cause or causes which led to the partial decay of the personal totem and to the development of the kin-totem among these tribes, I think no one who takes all the evidence into consideration can doubt that among the Salish, at least, the personal name and totem gave rise to the group or kin name and totem.

Throughout all the Salish tribes[1] the local or village group, as a whole, invariably bore a topographical name, but among the lower tribes, the subdivision of the village group, the constituent kin-groups or families, are distinguished from one another by different crests and crest names. These crests and names are totemic in origin and significance, and are almost invariably derived from the early ancestors of the family or group, commonly from the "First man" or "Founder" of the family. Among certain groups these "First men" are always conceived as "tel swḗyil," *heaven born*; others, again, are "tel temṓq," *earth born.* These resemble the *ertwa* of the Kaitish and Unmatjera, and are always regarded as "real men." Paul's kindred at Yale claim descent from these, and their totem symbols or crest is a human figure. Paul remarked in this connection, "If I were to die here (Port Douglas), and my people were to bury me in the old-fashioned way, they would paint or carve a figure of a man on my coffin as well as my other crests. Anybody seeing this would know that I belonged to Yale on one side of my family."

Yet other family groups are thought to be descended from the mythic semi-human, semi-bestial beings of the S'p'tắkwEtl days. But from whatever source their traditions make them spring, we always find their names are hereditary and relate to incidents in the lives of the fathers or early members of the group.

Now, as most of these incidents are clearly mythical in character, they cannot be the true source of the names, and must have been created to account for the names themselves. Whence, then, came these family hereditary totem names?

We have seen that the source of a large proportion of the personal names was the *snam* or nagual; we have also seen that these personal names are hereditary, and descend from father to son, or from generation to generation. May we not, then, reasonably conclude that the hereditary kin-name had a similar source, and was the personal *snam* name of some distinguished ancestor of the kin-group? Holding the views that the Salish did—views which appear to be common to unsophisticated races everywhere—that the beings which peopled the earth in the "days of the new," partook of the character and shape of both man and beast, it would be strange if in their endeavours to account for some of their hereditary names their imaginations did not suggest relationship to and descent from these beings. To their minds there was nothing impossible or even incongruous in such a relation, as their myths, which I have recorded, plainly show. And if this be true, as I hold, of the Salish, then it may very well be true of all other unsophisticated peoples which hold similar animistic beliefs.

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[1] It is not without point and interest to remark here that we find many of the local totem groups of the matrilineal Haida bearing topographical rather than totem names, though they possess the latter as well as distinguishing group-crests.

I have said that a certain sept or kin-group, to which Paul belonged on his father's side, traced their descent from the "ertwa men" of the S'ptákwᴇtl days, and owned a 'ntcūwálap or crest in the form of a human figure. But besides this group there was another with which he was associated by affinitive ties at Yale which traced its descent from the mountain-goat, and whose crest or kindred symbol was the figure of this animal. The traditional origin of this group is given in a very interesting and instructive myth which I have given in full below.

According to this myth, the founder of this totem-group was not a "First man." He was a youthful hunter, who lived with his parents in a village with other families. He was accustomed to hunt the wild goat; and it seems that both he and the rest of his tribe had been careless in their treatment of the carcases of their game. The chief of the goats therefore planned to draw him to their camp and reveal to him their mystery powers and teach him the proper way to treat the "animals" which he killed. These goats were like the S'p'tákwᴇtl beings; they had a human as well as a bestial side. He stayed with them and learnt many things; assumed the form of a goat; took two of their women for wives; had children by them; and was later sent home again with his two sons, who became the founders of the mountain-goat kin.

Thus the story has it; but the facts of the case are most probably that a certain young man went off to undergo his puberty training and had a dream or vision of the mountain goat, which he regarded as his *snam*. He may have dreamt the incidents of the story, which are thoroughly in keeping with Indian conceptions, or they may have become associated with the kin-totem in some other way.

The value of the myth to us is in its revelation of the workings of the primitive mind, and of the way in which it looked upon nature. Viewed in this way, the myth will often offer to us valuable light and suggestion as to the real origin of what it purports to explain.

The family hereditary names of the group, whom tradition derives from the "ertwa men," all relate to the "mystery powers" of the "First man," or to a magic contest he had with the demi-god Qals. It is recorded that when Qals was travelling down the Fraser he stopped at Yale to try his mystery power upon Paul's paternal ancestor, whose name was Qaílqilmos, which means "great in mystery power," having much the same signification as the term "Qals" itself. The contest between the two was very severe, and Qaílqilmos was the victor. The trial between them seems to have consisted in taking away each other's strength and vigour. When Qals perceived that he was beaten, he told his adversary to take a measuring stick (sQélᴇmtᴇn) and measure all the different parts of his body.

Qaílqilmos did this. Qals then said, "O my grandfather,[1] you are very strong; now make me strong again." Qaílqilmos restores him to strength and vigour again, and as they parted Qals bade him thereafter call his children by the names of the different measurements he had taken of his body.

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[1] Note the form of address.

One of Paul's names, viz.: "sQḗlEmkEn" = *head measure,* is a specimen of these names. Other names of this family are "slā́tctEl," "slā́tcētluk," "slā́tcElât." These are also called "tel Qals" or "Qals' names." They signify "power to transform." The first was borne by Paul, the second by his brother, and the third, which has the feminine suffix, by his sister.

Paul had kindred at StsEḗlis, at Lilūetṓl, and at several other villages. In each of these he had one or more names peculiar to the group or kin to which he was affiliated. One of his StsEḗlis names was "tel zūwḗn." This was a "mystery" name, and was supposed to carry with it power over the salmon. The term was "Swätlálsultεn." Zūwḗn names always went in pairs, that is possessed a masculine and a feminine form. The feminine form of this was "SwätlálsulwEt."

Another pair of these names was "Skwilā́qílanoq" (masc.) and "Skwilā́qtelât" (fem.) The names of two of the "first pairs" of the Skaúlits, which I gave in my notes on that tribe last year, are also Zūwḗn names, Paul said. Another specimen of these, which belonged to some of the Coast Salish, is "SkwḗlesiltEn" and "Skwḗlesât." These are derived from the word "copper," *kw*E*ḗlis*, and evidently commemorate the acquisition of some "copper treasure."

Paul's most honourable name at his mother's village of LilūEtṓl was "NErḗpEkEnálct," which signifies "to grow or become great." This also was a Zūwḗn name.

It is difficult to ascertain with any exactitude who or what these Zūwen people were. They were supposed to possess certain mystery or magic powers. They used esoteric formulas or incantations in their ceremonies or performances, the knowledge of which was most jealously guarded, and only spoken of in whispers. When a Zūwḗn person desired to initiate his son or nephew he took him apart by himself, gave him a Zūwḗn name, generally his own, and revealed to him in whispers his sacred knowledge concerning the origin of his family, and imparted to him the word or words of power.

The Zūwḗn do not appear to have been a brotherhood or society. They are supposed to be the lineal descendants of those who traced their origin to the mythic beings of the S'p'tā́kwEtl times, for they are thought to have power, by means of certain secret ceremonies and mystic words, to summon or compel the presence of the animals which are the modern representatives of their mythic ancestors.

For instance, the eldermen of the mountain-goat people of Yale and of the Sturgeon people of Skaulits could go to the mountains or to the river, as the case may be, and by a mystic dance, by spitting and breathing on their hands and wrists and rubbing them in a peculiar way, and by the utterance of the "words of power," cause their "relatives" to come and be killed for food. According to Paul, who is related to the Sturgeon people, the elders of this kin-group met together at night and invoked the sturgeon in the mystic tongue in such words as these: "O, our grandfather (or grandmother), come to your grandchildren and be killed for food."

Shortly after a sturgeon would be taken. When the fish was killed the carcase was drawn to the shore and secured for the night. Next morning at sunrise it was cut up and distributed, great care being taken to wash all the blood spilt in the operation back into the water. The offal was also carefully gathered up and returned to the water, and, after the fish was eaten, all the bones likewise. The reason for this I gave in the Sturgeon myth recorded in my last report; it will also be found in the myth of the mountain goats herein recorded. The whole ceremony of cutting up was carried out with great decorum and reverence. The fish might be shared among all the tribe, but only those who belong to the Sturgeon crest or kin could assist in the capture and cutting up of the creature and in the disposal of the blood, offal and bones.

When cutting up the sturgeon the spinal cord (" Kwătlala ") is taken out and cut into pieces about six inches long. A piece of this is given to each man assisting in the operation, but no woman or youth must touch it. The men who receive these strips of " Kwătlala " take them home and suck them. Later they return them to the elderman or master of the ceremonies, who takes them, and some of the eggs or the head of the sturgeon, and makes a soup from them. Before returning the strips of " Kwătlala " each man puts his private mark upon his piece, and when the soup is ready he gets it back again in his portion. His wife may now eat of the " Kwătlala " if she has not lately given birth to a child or recently recovered from her catamenial flux.

Similar ceremonies were performed by other " crests " or kin-groups who claim descent from S'p'tăkwEtl animals.

If we take the culture of the Interior Salish as typical of the original Salish, then the Züwĕn features are comparatively recent in their growth and appearance. They are unknown in the interior tribes. We first meet with them among the lower or mixed StlatlumH. Below this they form an essential and characteristic part of the sociology of the Halkōmēlem and Coast Salish and play an important *rôle* in the name systems of these tribes.

I think it well to remark again that names among the Salish tribes, as among other of our native stocks, seem never to have been used in the sense in which we employ them, with the possible exception of the stāz or nickname. And even these had a sense and significance in the native mind they never have in ours. It is somewhat difficult, therefore, for the sophisticated student to rightly comprehend what " names " signified to the Indian. Apart from the stāz names, they are never used as mere appellations to distinguish one person from another, as among ourselves, nor do they seem to have been used ordinarily as terms of address. They are primarily terms of relation or affiliation, with historic and mystic reference. They were reserved for special and ceremonial occasions. The ordinary terms of address among the Salish tribes, as among other primitive peoples, were those expressive of age. Length of years with them carried with it experience and wisdom, and, therefore, honour. It was customary, therefore, for the speaker, when he addressed a person whom he wished to honour or placate, to apply to him some term indicative of superior age, and so of superior honour, such as uncle, aunt; father, mother; grandfather, grandmother. Folk-tales and myths are full of such examples of address. Terms of address within the family circle are all framed on the same plan. A brother does not call his brother or his sister by a *snam* or hereditary or even by a stāz name, but always by a term expressive of their relative ages; and when speaking of them to others he uses terms with similar meanings. A man's " proper " names seem only to have been used among the Salish on ceremonial occasions, or when one wished specially to gratify or honour a person. Said Paul to me in this connection: " When I was a little boy my mother would sometimes speak to me by one of my ancestral names to coax me into doing something for her, or when I had gratified her by some act." Or again: " If my father or uncle had given somebody something, such as food, or skins, or blankets, the recipient would invariably, in thanking him, employ one of his 'proper' names."

On occasions of public ceremony, such as the potlatch or other feasts, or at the winter dancing, men were always formally addressed by their hereditary, mystery or *snam* names. During the Smētlā́s, among the Halkōmélem tribes, the dancers were always called and addressed by their Smḗtla or nagual names, but these were dropped again as soon as the Smētlā́s was over, more particularly if the name itself carried in its ordinary sense any dishonouring reflection with it. Some animals, such as the dog, were held in small esteem by the Salish, and a man, whose sulia was a dog, was not proud of the circumstance after the Smētlā́s season was over. During the dancing he would be spoken of and addressed by his " dog " name, but after it was over it would be deeply offensive, besides being contrary to etiquette, to address him by this term. When I sought an explanation of this from Paul he replied that a dog was the absolute property of its owner, who might ill-treat it or kill it, or do whatever he liked with it, as with a slave. It had no rights of its own; it lived by sufferance, consequently it was despised and held in small esteem. A person, therefore, having a " dog " sulia or name was not particularly proud of it outside of the Smētlā́s (where it had no offensive signification, being then a " mystery " object), and was not desirous of having it applied to him, as it carried with it a suggestion of " dog " descent,—an origin as ignoble and contemptible in Indian eyes as in those of more sophisticated races.

On the other hand, some of the Smētlā́s names were of honourable import, and conferred distinction upon their owners. A person possessing such a name would feel gratified at having it applied to him at any time.

In the Smētlā́s of the StsEḗlis the elderman of the mountain-goat kin always danced the " Goat " dance, which was characterised by his wearing a goat-skin with the hair upon it. This he would from time to time turn about, at one time with the hair inside, at another the opposite. This action portrayed the dual nature and the transformation of his goat ancestors. The dancer and the dance both bore the name TlipElkélEm, which signifies " turning the hair inside," that is, " becoming a man."

According to Paul, among the Halkōmélem no man of position or rank or family had a "stāz" name. Such names were borne by persons of inferior station only and by slaves. Men of rank always bore hereditary "zūwḗn" or mystery names indicative of their honourable descent. Among these tribes every family or kin-group of distinction had its pedigree and names of descent and kin-crests. All names were known publicly, but their significance and the family traditions relating to them, more particularly those belonging to the "zūwḗn" class, were secret and private to the individual or to the kin-groups. Paul said that any other Indian of "family" could tell to what class a man belonged as soon as he heard his name, and whether the term were a "zūwḗn," or "mētlā́s" or other name.

One peculiarity about *snam* names was that the term was invariably more or less modified in form. Among the lower Stlā́tlumH, for instance, the name of a man whose *snam* was the grizzly bear would be "'NklatEl-mā́ckEt," and that of a woman "Klatlil-mḗnak." The common term for *grizzly-bear* was "Stlātlā́lEm." Teit has remarked in this connection that the totem names of the Thompson are modified forms of the common names of the objects from which they are derived. The practice would therefore seem to be a customary one.

CRESTS.

Intimately connected with names were the personal and family "crests." Indeed, in a certain sense the Salish kin-names may be said to be the result of the crest, the kin or family being known and distinguished by its crest; so that if further evidence be wanting to sustain my claim, that the kin-name was originally the personal mystery or *snam* name of one of the ancestors of the kin, it may be found in the study of these crests.

There were two kinds of these, called in the Stlā́tlumH dialect the "'ntcūwā́lap skwEḗkwilauq," or *dream picture* belonging to the individual, and the "'ntcūwā́lap tlel (=tel) kṓlelca" or *picture of descent* belonging to the family, and the latter is undoubtedly the former become hereditary. And just as there are no hereditary kin-group names among the Interior tribes so are there no kin-group crests.

According to Paul every individual had a *snam* mark or picture, in other words a personal "crest," the symbol of his nagual. This he customarily placed upon his personal belongings to mark or distinguish them from those of his fellows. But when we descend the river and meet the Delta and Coastal tribes, we find the personal "crest," like the personal totem, giving place to the kin-group "crest," which among these tribes is possessed by every family of standing, and is its peculiar distinguishing visual mark.

Whenever a dwelling was erected, the common practice in earlier days was for the eldermen of the kin-groups to carve, or have carved for them, on the main posts of their "apartments" their hereditary 'ntcūwā́lap kṓlElca or "crests of origin." Said Paul to me in this connection: "If you had come to my father's house fifty years ago, you would have seen a 'picture' carved on each of the main posts of the interior, and had you asked him what those 'pictures' meant, he would have answered you with pride: 'nE ntcūwā́lap tlel tc' kṓlElca,' *my crests* *of descents.*" Sometimes these figures were carved on the exterior of the building or erected on poles or placed on the gable ends. They were also invariably painted or carved on the family graveboxes.

Pride of "family" is the distinguishing trait in the character of the Delta and Coastal Salish. However this may have been developed, whether by spontaneous growth or as the result of the conquest and subjugation of an inferior alien race, there can be no doubt that it has been one of the chief factors among these tribes in the creation of family traditions, and in the evolution of kin crests and names from the earlier personal crests and names.

The same desire and craving for social distinction led to the rise and development of the "potlatch" and to the so-called secret societies of the tribes of this region.

Time, or Divisions of the Day.

The StlatlumH language is rich in terms or phrases expressive of the "time" or divisions of the day. I have not met with similar divisions in the other dialects I have examined, though it is possible they may exist. The following list is by no means exhaustive :—

plan tcEā́c p'cīl, *aurora, or daybreak, ad litt.* "just it comes day."
plan aitl p'cil, *dawn, ad litt.* "just now morning."
plan tcEtl pū́lmūq, *daylight, ad litt.* "just see things."
plan aitl Eskḗt, *broad daylight, ad litt.* "just now day."
ṓtska snúkuma, *sunrise, ad litt.* "outside sun."
plan kāqÉqEtka, *early morn.*
kāqā́tka (voice dwells on second syllable) *midway between sunrise and noon.*
kEn rípa, *noon, midday.*
kEn múmulkwa, *two hours* (approx.) *afternoon.*
kEn múlEkwa, *middle of afternoon.*
rápElmin, *about four hours after noon.*
ā́lac kEnmúlEkwa *three-fourths of the day gone.*
kḗlEkam snúkuma, *sun sitting down.*
kEHíma snúkuma, *sunset, ad litt.* "gone the sun."
rap, *evening.*
skaútlEntcūt, *creeping up the mountain.* This refers to the line of shadow on the eastern mountains.
ketclípkwa, *reached the top, i.e.,* the line of shadow.
kEkwÉca, *twilight.*
ckictlípa, *getting dark.*
kātlípa, *night, darkness.*
klipEtlpÉm, *pitch dark.*

Sundry Beliefs and Superstitions.

To sneeze three times in succession was believed by the StlatlumH to bring good luck to the person sneezing. To sneeze through the right nostril, nzäalukc, was also a sign of good fortune, but through the left nostril, 'ntcēkwälukc, a sign of bad fortune.

The small red lizard was much dreaded by the StlatlumH, who regarded it in much the same light as the Haida did the mouse. They believed that it entered a man through his nostrils and ate up his heart and liver, and thus killed him.

The following story illustrates their superstition on this head. Two men were out hunting a long distance from home. One of them went off to fish alone, and came to a certain spot where he perceived many of the stones on the beach stained with a peculiar yellow matter. He thought to himself: "This is a 'bad' place to be in; there must be lots of lizards about here; I had better get away at once." So he hurried off and went back to his comrade, and told him he had by ill luck chanced upon a lizard colony, and that it would be wise for them to leave that neighbourhood as quickly as possible. His companion agreed, and they set off without delay, travelling for the rest of that day and all through the following night, without stopping to rest. When they got home, the man who had visited the lizard "village" told his wife what had happened, bidding her and the children watch at the door while he slept. She rolled him up in a blanket and he slept all that day, while she and the children watched. In the evening he rose and took their place, and sat watching by the door all night. No lizard appeared that night. Next morning he went to bed again, and the family kept watch as before. Early that morning the wife had occasion to go down to the river for water, and as she stooped to dip it up, she perceived two lizards hiding under the bottom of the canoe. She straightway killed them and hurried back to tell her husband that the lizards had followed and found where he was staying. He bade her watch carefully all day that none came near while he slept. The next night he watched again. The night was the most dangerous time, as the lizards then wandered about. About sunset therefore he made a large quantity of brine, and took a large basket and set both by the door and sat down to wait events. As soon as daylight had gone, the lizards began to come forth in twos and threes. They sought to enter the house, but when they came near the doorway, he poured brine over them, which instantly killed them. When dead he placed them in the basket, and by morning he had filled it with dead lizards. They continued to watch and kill the lizards in this way till all had been exterminated, and the man was safe from them again.

This is said to have happened within the last few years. It is clear that the incidents are modern, because of the use of the "brine" to kill the lizards. The Indians had no salt and therefore no "brine" before the advent of the whites.

LINGUISTIC.

As far as I am aware, no attempt has been made to set forth the grammatical structure and peculiarities of the StlatlumH speech, which, while approximating in its vocables to the N'tlakápamuQ on the one side, and to the Halkōmḗlem on the other, is quite distinct in structure from either of these dialects. Some of the peculiarities are very interesting. The more noticeable of these are the verbal termination "En," which is not found in any of the other dialects I have examined; a plural article or demonstrative "ē" which precedes substantives used in a plural or collective sense, and in certain constructions, is suffixed to verbs as a pronoun of the third person plural; and a final "a" which is invariably added to nouns and pronouns in composition.

Thus:—

túk-En, *to take up;*
nā́k-En, *to charge;*
záq-En, *to pack;*
caúQ-En, *to wash;*
ā́tsuq-En, *to see;*
suk-En, *to split;*
zōwā́t-En, *to understand;*
ē skElaúa, *beavers;*
ḗ stlṓtla, *deer;*
ē sḳáḳa, *dogs;*
mḗtcak-e, *they get up;*
k·lEâ'k-ē, *they go away;*
klâz, *canoe,* in composition, klā̆za;
kō, *water,* in composition, kṓa;
hṓmit, *paddle,* in composition, hṓmita;
tcḗEkutEn, *spear,* in composition, tcḗEkutEna;
katl, *our,* in composition, kátla;
kálEp, *your,* in composition, kálEpa.

Other examples may be seen in the native text. Other peculiarities not observable in the dialects previously examined are certain incorporative or enclitic particles which have the function of an objective pronoun of the third person; the use of the verbal affix Es or Ec (otherwise as or ac) as a prefix to words to give them verb force, and a modification of the same affix under the form "cEc" or "ses" to signify action upon something.

Thus:—

rḗEp, *to grow;*
rēEps, *he grows;*
rēEps*talī, to make him grow up;*
nauk·, *to steal;*
nauk-*mén-ta'lī, steal him away;*
nauk·-*mén*-Em-to, *he was stolen;*
nac, *to go;*
nac-*mēn*-ac, *he went to him;*
tcḗōq·, *to come;*
tcḗōq-*mēn*-ac, *he came to him;*

nEk·itc, *to put in the mouth ;*
nEk·itc-*mēn*-ac, *to put it in his mouth ;*
skwāl, *to say, tell ;*
skwā́l*mēn*, *she tells him ;*
mícitc, *to close the mouth ;*
E*c*-mititc, *he closes his mouth ;*
mEtcṓc, *to mark or paint the face ;*
E*c*-mEtcṓc, *he paints his face ;*
nauk·, *to steal ;*
E*c*-nauk·-tō, *he has been stolen ;*
E*c*-mētcak, *he sits down ;*
tcḗoq, *to come ;*
tcḗoq-as, *he comes ;*
tcḗoq*c*E*c*, *he comes with it or it brings it ;*
kānēm, *to hear ;*
kanēm*c*E*c*, *he hears him ;*
ā́tsuq, *to see ;*
ā́tsuq-*c*E*c*, *he looks after him or it ;*
tlēEk, *to come ;*
tlḗEk-*c*E*c*, *he brings or comes with it.*

As in the other dialects examined, we find a distinct and separate particle in StlatlumH to express futurity; no two thus far have been alike.

My grammatical data have all been drawn from the middle StlatlumH, from the LīlūEtōl or LílūEt proper. I consider this the purest form of the StlatlumH speech. The dialectical differences in the upper and the lower tribe, however, are not great, and belong rather to the vocabulary than to the structure of the language.

The chief interchanges of letters are c = sh for s. This was particularly noticeable in the speech of Paul. L and n also commonly interchange. In the mouth of one person the "l" sound will predominate, in that of another the "n" sound. The long vowels ē, ī, and ai are sometimes very difficult to discriminate. The investigator will find himself sometimes using one, and sometimes another, in writing the same word. In the texts as here presented, I have made an attempt at uniformity in the use of these vowels. The short vowels are also very indeterminate in character.

PHONOLOGY.

Vowels.

a	as in English	*hat.*	i	as in English	*pin.*
ā	„ „	*father.*	ī	„ „	*pique.*
â	„ „	*all.*	o	„ „	*pond.*
a	„ „	*gnat.*	ō	„ „	*tone.*
e	„ „	*pen.*	u	„ „	*but.*
ē	„ „	*they.*	ū	„ „	*boot.*

E, obscure vowel as in English *flower*; ^{u} written above the line, a vowel sound which mostly follows the palatised k· and is only partially articulated.

Diphthongs.

ai, as in *aisle*; au, as in *cow*; oi, as in *boil.*

Consonants.

b as in English.
h „ „
k „ „
k· a strongly palatised or "clicked" *k*.
ḳ intermediate between our *k* and *g*.
tl an explosive palatised *l*.
L the same but shorter, approximating to the sound of the final *-tle* in the word *cuttle.*
l as in English mostly, but interchanging with *n* in the speech of some Indians.
m as in English.
n as in English, sometimes more strongly nasalised than with us.
p as in English.
p' no English equivalent, semi-mute semi-sonant.
r the sound this letter stands for is not our *r*, but something midway between it and *l*.
t as in English mostly, sometimes intermediate between our *d* and *t*.
t· a palatised or "klicked" *t*, scarcely distinguishable from the "klicked" *k*, but nevertheless a distinct sound.
w as in English.
y „ „
q as in *ch* in *loch* in broad Scotch.
Q approximately as *wh* is uttered in North Britain.
H as the German in *ich*.
c as in English *sh*.
tc, as *ch* in the word *church*.
ts, as in English.
dj, as *j* in English *juice*.
kw, as *qu* in the word *quantity*.

The comma sign, ', written above the line, means a pause or hiatus usually caused by the elision of a vowel. When placed before the letter *n* thus, 'n, it marks the absence of the initial *e* sound. This *n* is a characteristic initial sound of many "proper" names in StlatlumH. The same feature is found in a still more marked degree in the neighbouring N'tlakápamuQ.

Accent.

Accent in the StlatlumH follows much the same laws as in the other Salish dialects examined. There are two accents, a primary and a secondary one. The former marks the principal radix, and the secondary the quantity of a word. Accent also plays an important *rôle* in oratory and rhetoric.

Number.

Number is distinguished in StlatlumH, as in the other Salish dialects, in a variety of ways, the commonest of which is peculiar to itself. This is by prefixing the demonstrative particle ē to the object word and adding to the latter a final *a*, thus: tē skelau′, *a beaver*; ē skelau′a, *beavers.* This *a* is also added to words in the singular in composition. It therefore is not characteristic of plurality or severalty, though it is invariably found in company with the number-making particle. Reduplication plays its ordinary *rôles* in the ideas of severalty or distribution in StlatlumH.

The vocabularies and texts will afford abundant examples of these.

Gender.

The formal grammatical gender which I have pointed out in other dialects appears to be wanting in the StlatlumH. The demonstrative particles have the same form with masculine as with feminine terms, with one exception. I have drawn attention to this under "Terms of Consanguinity," page 206. When therefore it is necessary to distinguish gender, it is effected by placing the terms for "man" or "woman" before the class word. That for man is somewhat modified. Thus:

my child (masculine), tē skai′wa n'skṓza.
my child (feminine), tē yā́kutca n'skṓza.

The term "old" used substantively is sometimes differentiated to mark gender. Thus: kutLmḗn, *old-man*; kutLnímEn, *old-woman.*

Substantiva Instrumentalia.

Besides the common characteristic suffix -tEn or -tEl, we have another instrumental suffix in StlatlumH, viz., min. I observed a few cases of this suffix in Śiciatl, but it was not so characteristic of that dialect as of this, where it holds a place equally with the commoner -tEn. Sometimes it is interchangeable with it, but not always so; there is therefore an interesting difference in the usage of the two suffixes. I give a few examples of each. Further examples may be found in the vocabulary.

-tEn.	-min.
anchor, nätcámä-tEn.	*adz*, klā́-min.
bed, āqḗtc-tEn.	*bowl*, 'nklaúka-min.
comb, wḗHuk·^{u}-tEn.	*file*, zúk·a-min.
language, 'nkwālū́t-tEn.	*paint*, Qḗkwe-min.
moon, k·'lā́näm-tEn.	*spoon*, ctlakḗ-min.
trap, kā́kil-tEn.	*wash-tub*, caúQ(E-)min.

a borer, qútuk-min or qútuk-tEn.

Substantiva Officalia et Attributiva.

These in StlatlumH are formed by adding the suffix -ōtl or ōEtl to the substantive or verb, which may or may not be duplicated, thus: *a liar*, kEkEzṓEtl, from kā́käza, *a lie.* Here the vowels of the term have undergone modification, but this does not always happen.

a thief or robber, nuk·^{u}näk·^{u}ṓEtl; from nuk·^{u}, *to rob.*
a stutterer, Es'ṇā́EnEtcṓEtl; from Es'nā́EnEtc, *to stutter.*
a tattler, kwālūt-ṓEtl; from kwālū́t, *to speak, tell.*
a hunter, pukpēEkEm-ṓEtl; from péEkEm, *to hunt.*
a dancer, mōtsōm-ṓEtl; from mṓtsōm, *to dance.*
a singer, klēm-ṓEtl or ētētlum-ṓEtl; from klélēm or étlum, *to sing.*

Synthetic or Incorporative Nouns.

These are mainly employed in the Salish dialects when speaking of the body or its parts. A few other class nouns such as those for house and trees have also incorporative forms, but they are truly characteristic of corporeal terms only. Thus:

tzāwEqÉn-am, *to wash one's feet.*
tzāwā́k'-am, *to wash one's hands.*
tzaukw-am, *to wash one's head.*
tzāwṓc-Em, *to wash one's face.*
tzawawátc-En, *to wash one's breast.*
tzauwáck·wElt-am, *to wash one's throat.*
En-tzaúk-Em, *to wash one's back.*
En-tzawā́n-am, *to wash one's ear.*
En-tzōtzaulúkc-Em, *to wash one's nose*; here the term is reduplicated because of the *two* nostrils.
En-tzauwālṓs-Em, *to wash one's eye.*
En-tzūtzauwālṓs-Em, *to wash one's eyes*; reduplicated to mark number.
En-tzauwalēmā́t-Em, *to wash one's neck* (*at the back*).

PRONOUNS.

1. *Personal Pronouns.*

Of these there are three classes in StlatlumH, viz., the Copulative or Enclitic, the Independent, and the Incorporative.

Copulative Pronouns.

Employed with Indicative mood.	Employed with conditional mood.
Singular.	
I, kEn or kan and tlkan.	*I*, -an, -En ; Ens, Endj.
Thou, kauq and tlkauq.	*Thou*, -auq, -q, cū.
Plural.	
We, katl, kátla and tlkatl, tlkátla, Em.	*We*, -Em -m, -at.
You, kálap, kálapa and tlkálap, tlkálapa.	*You*, álEp, -lEp, -Ep.

The forms employed with the third person are not pronouns, so I do not give them here. They are merely verbal terminations of auxiliary verbs, and the difference between the singular and plural is just the addition to the latter of the plural demonstrative to mark number.

These copulative forms are generally suffixed to the verbs. Sometimes, however, they are prefixed. When prefixed they give a somewhat different sense to the verb.

Independent Pronouns.

I, *me*, sEndj or sEntc.	*we*, Qic-némEl or s'nẹ́mōtl.
thou, s'nū́wa or s'nū́a.	*you*, Qic-nū́lap.
he, *she*, *it*, s'nītl.	*they*, Qic-nítl.

Other forms which are demonstrative in character, employed with the verb in the third person, are:—

Singular.	Plural.
tā, tāṓ, tūtēwā́.	étlū, Entūēwā́ ézō.

2. *Possessive Pronouns.*

Of these there are two forms, the general and the selective. Both are more or less enclitic, thus:—

Singular.

n'-, *my*, as n'-sḳā́ḳa, *my dog*.
-cū, *thy*, as sḳā́ḳa-cū, *thy dog*.
-c or -ca, *his*, *her*, as sḳā́ḳa-c, *his*, *her dog*.

Plural.

-tlkatl or katl, *our*, as sḳā́ḳa-tlkatl, or sḳā́ḳa-katl, *our dog.*
-lap, *your*, as sḳā́ḳa-lap, *your dog.*
-ē, or -ḗha, *their*, as sḳā́ḳa-ē, *their dog.*

Selective Form.

ten sḳā́ḳa, *my dog.*	tē sḳā́ḳa-tlkátla, *our dog.*
tē sḳā́ka-cūwa, *thy dog.*	tē sḳā́ḳa-lápa, *your dog.*
tē sḳā́ḳa-ca, *his, her dog.*	tē sḳā́ḳa-ḗha, *their dog.*

3. *Locative Possessive Pronouns.*

This class of pronoun has in addition to the possessive element a locative signification, indicating the position of the object possessed, thus:—

Object present near speaker.

Singular.

my, tᴇn, as tᴇu sḳā́ḳa, *my dog.*
thy, tc' - - - cūwa, as tc' sḳā́ḳa-cūwa, *thy dog.*
his, her, tc' - - - ca, as tc' sḳā́ḳaca, *his, her dog.*

Plural.

Our, tc' - - - tlkátla, as tc 'sḳā́ḳa-tlkátla, *our dog.*
Your, tc' - - - lápa, as tc' sḳā́ḳa-lápa, *your dog.*
their, tc' - - - ḗha, as tc' sḳā́ḳa-ḗha, *their dog.*

Object absent or distant from speaker.

Singular.

my, nēn, as nēn sḳā́ḳa púkuk·^{u}, *my dog is white.*
thy, nē, as nē sḳā́ḳa-cūwa púkuk·^{u}, *thy dog is white.*
his, her, nē, as nē sḳā́ḳaca púkuk·^{u}, *his, her dog is white.*

Plural.

Our, nē - - -tlkátla, as nē-sḳā́ḳa-tlkátla púkuk·^{u}, *our dog is white.*
your, nē - - - lápa, as nē-sḳā́ḳa-lápa púkuk·^{u}, *your dog is white.*
their, nē - - - ḗha, as nē-sḳā́ḳa-ḗha púkuk·^{u}, *their dog is white.*

These locative particles are the demonstratives "tcᴇ" or "tcä" = *here* and "nē" = *there.* This latter is the common sign for the past in verbs in the Halkōmēlem and Sk·qōmic.

Once, in the text of the mountain-goat myth, the form "kwᴇn" = *my*, appears. This form is common in the Halkōmēlem and is employed when the object is present but invisible to the speaker.

4. *Substantive Possessive Pronouns.*

These likewise have a general and a selective form, thus :—

General form.

mine, n'tcŭ́wa,	*ours*, tcŭ́watlkatl.
thine, tcŭ́wacŭ,	*yours*, tcŭ́walap.
his, hers, tcŭ́wac,	*theirs*, tcŭ-ē.

Selective form.

mine, tEn tcŭ́wa,	*Ours*, tē tcŭwatlkatla.
thine, tē tcŭ́wacŭ,	*yours*, tē tcŭ́walápa.
his, hers, tē tcŭ́waca,	*theirs*, tē tcŭ-ēha.

These forms are also used with the object when they become the equivalent of our emphatic forms, my own, thy own, etc., thus :—

nētl n'tcŭwa tcítŭQ, *it is my own house.*
nētl tcŭ́watlkatl tcítŭQ, *it is our own house.*

5. *Incorporative Pronouns.*

It will be seen that these present considerable differences from the corresponding forms in the dialects previously examined.

nōk·^{u}an-*tcē*-tlkan	kitl,	*I will help thee.*
„ -*tṓmō*-tlkan	„	*I will help you.*
„ -*tc*'-kauq	„	*thou wilt help me.*
„ -tṓmōtl-kauq	„	*thou wilt help us.*
„ -tcē-m	„	*we will help thee.*
„ -*tăm-tlkálap*	„	*we will help you.*
„ -*tc*-aic	„	*he will help me.*
„ -*tṓ-mōtl*-ac	„	*he will help us.*
„ -*tcē*-hac	„	*he will help thee.*
„ -*tăm-ắlăp*-ac	„	*he will help you.*
„ -————ac	„	*he will help him.*
„ -*tc*-ălītac	„	(étlū) *they will help me.*
„ -*tcē*-hac-wēt	„	„ *they will help thee.*
„ -*tăm-ắlăp*-ac	„	„ *they will help you.*
„ ————-ac	„	„ tEó, *they will help him.*

These incorporative forms appear to be regularly and uniformly employed as we find them with other verbs, thus :—

ătsuqEn-*tcē*-tlkan, *I see thee.*
„ -*tc*'-kauq, *thou seest me.*
„ -*tcē*-m, *we see thee.*

ā́tsuqEn-*tṓmōtl*-kauq, *thou seest us.*
„ *-tc*-ac, *he sees me.*
„ *-tṓmōtl*-ac, *he sees us.*
„ *-tcē*-ac, *he sees thee.*
„ *-támaläp-ac, he sees you.*

Reflexive Pronouns.

-tcūt.

ka cíkEn-tcūt-kÉna, *I struck myself* (*accidentally*).
ka „ -tcūt-kátla, *we struck ourselves* (*accidentally*).

This form is identical with that in the N'tlakápamuQ.

Indefinite Pronouns.

tā́kEm-cwät, *anybody.*
cwā́tac ka, *somebody.*

Interrogative Pronouns.

cwät or cūwät ? *who ?*
cwā́nōtl ? *whose ?*
stäm ? *what ?*
kūn ka ? *which ?*

Examples.

Cwät kō mā́itcintáli tc'ā́ tcítūQa ? *who made this house ?*
Cwät kauq ? *who are you ?*
Cwät tī ? *who is this ?*
Cwät tEṓ ? *who is that ?*
Cwät ḗtlū ? *who are they ?*
Cwā́nōtl tcEā́ smā́it ? *who did this, ad litt. whose is this work ?*
Cwā́nōtl tEṓ tcītūQ ? *whose house is that ?*
Cwā́nōtl tEṓ ? *whose is that ?*
Cwā́nōtl tcEā́ ? *whose is this ?*
Stäm tūō ? *what is that ?*
Stäm kwa sqátl-cū ? *what do you want ?*
Stäm tūā́ sqatl-cū ? *what* DO *you want ?*
Nētl kūn ka ? *which one ?*

Demonstratives.

Singular.	Plural.
tē, tī́, tā, tcE, tcEā́, ḗtza, *the, this.*	ē, ḗha, *these.*
tEṓ, tūṓ or tōṓ, tūtḗwa, *that.*	ḗtlō or ḗtlū, Entūḗwa, *those.*

Prepositional Phrases.

En tē kṓa, *in the water.*
En tē luk·^{u} luk·^{u} tzṓtca } *on the beach* { *=edge of water.*
En tē cēcúqtca } *on the beach* { *=beach proper.*
Ectlā́ tē tcítūQa, *near the house.*
En tē tcítūQa, *in the house.*
Ecṓtluq En tē tcítūQa, *within, or inside of, the house.*
Entc-tlēk'ta, *up in the sky.* (stlḗkEt=sky.)
'En tē kutLhá, *on the stone.*
En tē tEmḗQa, *on the ground.*
En tē qÉtc'ma, *in the box.*

Numerals.

The Salish dialects abound in class numerals and the StlatlumH marks no exception to this rule. Some of these are given below. The simple absolute forms are as follows:—

1 pála.
2 ánūwäc, or án'wäc.
3 kā́tlac.
4 qoṓtcin.
5 tcḗlkst, tcilkst.
6 tlā́kEmikst.
7 tcū́tlaka.
8 pilṓp'st, palṓpist.
9 k·'umpā́lmin.

10 k·'ump.
11 k·'ump wē pála.
12 k·'ump wē ánūwac.
20 án'wac sk·'umpc.
21 án'wac sk·'umpc wē pála.
30 katlac sk·'umpc.
40 qoṓtcīn sk·'umpc.
50 tcēlkst sk·'umpc.
100 HútcEpEqḗkēnk'st.

It will be seen that the StlatlumH forms approximate closely to the N'tlakápamuQ with the exception of two and ten. The number ten is the most constant of all the numerals and is found with but slight modifications in a large majority of the Salish dialects. This strange form in the StlatlumH is therefore the more noticeable. The formation of the decades in this dialect is, however, the same as in the N'tlakápamuQ.

Class Numerals.

Persons.

1 *man*, pā́pEla, pā́p'la.
2 *men*, Enán'wac.
3 „ EnkEkatlác.
4 „ EnQàHōHō'tcin.
5 „ Entcíltcilkist.

6 *men*, 'ntlātlā́kEmkEst.
7 „ 'ntcū́tlictläka.
8 „ 'npálpilṓpict.
9 „ 'nk·'umk·'umpā́lmin.
10 „ 'nk·'umak·'umEp.

Animals.

These terms are confined almost exclusively to the smaller kinds of animals:—

1 pÉpală.
2 ā́an’wac.
3 kátlitlic.

4 qoṓtcin.
5 tcítcilkct.
10 k·’uk·’umEp.

The interesting feature of these forms is the different manner in which the duplication is effected for the different significations.

	Logs and long round objects.	*Canoes, boats, ships, steamers, trains, etc.*	*Streams, creeks, small lakes, etc.*
1	pálalōk·^{u}.	palṓlwētl.	EnáläptkwE.
2	nūwácalōk·^{u}.	nūwasṓlwētl.	EnwäcátkwE.
3	kátlalōk·^{u}.	katlṓlwētl.	’nkatlátkwE.
4	qoṓtcinälōk·^{u}.	qoōtcinṓlwētl.	’nqōtcinátkwE.
10	k·’umpálōk·^{u}.	k·’umpṓlwētl.	’nk·’umpátwkE.

	Potatoes, apples, dollars, and other round objects.	*Houses, tents, etc.*	*Spears, arrows, stones, etc.*
1	pálōca.	pálālEtc.	pálalitc.
2	nuwacúca.	nūwācálEtc.	nūwácalitc.
3	kātlúca.	kātlálEtc.	katlálitc.
4	qoōtcinúca.	qoōtcinálEtc.	qoōtcinálitc.
10	k·’umpúca.	k·’umpálEtc.	k·’umpálitc.

The difference in sound between the last two classes is so slight that a European ear has difficulty in detecting any; but there is a distinct difference to the Indians. In counting with class numerals it was customary always to name the class object with the first number and again with the tenth.

ORDINALS.

first, kÉla or kíla.
second, an’wit.
third, EtinkEkatlactca.
fourth, Etinqōqōtcintca.
fifth, Etintciltcilkistca.

sixth, EtintlakEtlkum-kictca.
seventh, Etintcūtltlakatca.
eighth, EtinpalpElōpistca.
ninth, Etink·’umk·’umpalmintca.
tenth, Etink·’umk·’umEptca.

DISTRIBUTIVES.

one each,	pīlpā́la.	*six each,*	ē tlákEmikst.
two „	ē án'wac.	*seven* „	ē tcūtläka.
three „	ē kātlEtlác.	*eight* „	ē palṓpst.
four „	ē qoṓtcin.	*nine* „	ē k·'umpā́lmin.
five „	ē tcílkist.	*ten* „	ē k·'ump.

VERBS.

The inflection of the verb in the StlatlumH is effected, as in the other Salish dialects examined, by means of affixes and auxiliary verbs. The regular past is formed by adding *tō* or *tū* to the present stem. A modification of this particle is effected to express very remote action by a lengthening or duplication of the vowel, thus:—to-ṓ or tu-ṓ. The longer the vowel is drawn out the remoter the action or event. This particle is the equivalent of the *ētl* of the HalkōmēlEm and the *ōtl* of the Síciatl dialects. There appear to be no forms corresponding to the *ē* and *nē* of the Halkṓmēlem, or to the *tē* of the Síciatl and Sk·qṓmic. The simple future is formed by the addition of the particle *kitl.* It will be seen that this is different from any of the forms employed to express futurity in the other dialects examined, each one possessing a form peculiar to itself. There is a conditional future which is formed by prefixing the particles tai and hōi. Thus, "tai hṓi-kan-kálmin," *I shall sure to be hungry,* said by person who contemplates going a long time without food. Again tai hṓi kan-ā̃lsum, *I shall be sick,* said by person who thinks he cannot escape a prevalent sickness.

This particle hṓi is apparently the same as that which marks the regular future in N'tlakápamuQ.

SUBSTANTIVE VERBS.

Present Tense.

sick, ā̃lsum.

kEn-ā̃lsum, *I am sick.*	katl-ā̃lsum, *we are sick.*
kuq-ā̃lsum, *thou art sick.*	kélEp-ā̃lsum, *you are sick.*
wā-ā̃lsum, *he, she is sick.*	wā-wē̆t-ā̃lsum, *they are sick.*

This tense may be otherwise rendered. Thus we may say:—

ā̃lsum-tlkan, *I am sick.*
ā̃lsum-tlkatl, *we are sick.*

The difference in meaning between the two forms in substantive verbs is that the former is employed to express a statement of fact, the latter is used in answer to direct questions and may thus be called the responsive form. It means also more than the former, and is best rendered thus: "I am and have been sick for some time past"; when the sickness has been of long duration this is expressed by dwelling upon the initial vowel or syllable, thus: ā̃ . . . lsum tlkan, *I am sick a long*

long time. This of course is a very primitive method and is commonly employed in all uncultivated languages. It is also the method employed by children in their speech. The superlative degree in comparison is likewise thus commonly expressed :—

Past Tense.

kEn-tō-ā̃lsum, *I was sick.*	katl-tō-ā̃lsum, *we are sick.*
kuq-tō-ā̃lsum, *thou art sick.*	kélEp-tō-ā̃lsum, *you are sick.*
wā-tō-ā̃lsum, *he, she is sick.*	wā-wēt-tō-ā̃lsum, *they are sick.*

This form is the equivalent of the HalkōmēlEm "kákai-étl-tcil," *I was sick.*

There are several ways of expressing the past in StlatlumH. Thus I may say ā̃lsum-tlkan-tūŏ́, signifying by this prolongation of the temporal element tō that I have been sick, but am at the moment of speaking nearly well again. Or I may say, wā-tlkan-ā̃lsum, *I have been sick but am now well.*

It is interesting to note that this past particle "tō" has an independent function, and is primarily a locative adverb, meaning " there." The corresponding *ne* or *le* form of the HalkōmēlEm has the same double function and meaning, though in the interior it is employed by some of the tribes to express *future* states and actions. We get here a fine insight into the workings of the primitive mind and may perceive how the " temporal " elements of verbal conjugation are sometimes evolved. With the Salish speaker *time* holds a very subordinate place in his verbal syntheses. It is *place* rather that his mind dwells upon. Actions and states are always conceived by him as taking place *somewhere* rather than at *sometime.* If it be necessary to mark the time this is done by using an independent temporal expression as " yesterday," " to-morrow," " next moon," " last moon," and so on.

But when this is not necessary the "past" and the "future" are both expressed by a term of *local* signification, that is by an adverb of place. It is not difficult to understand this. Both "past" and "future" actions are equally away from the speaker, are both over "there." There is a "there" of the past and a "there" of the future, and thus we can understand how some of the Salish tribes have come to employ the locative *ne* to express "future" actions and states, and others the same particle to express " past" actions and states.

Future Tense.

kEn-ā̃lsum kitl, *I shall be sick.*	katl-ā̃lsum kitl, *we shall be sick.*
kuq-ā̃lsum kitl, *thou wilt be sick.*	kálEp-ā̃lsum kitl, *you will be sick.*
ā̃lsum kitl, *she, he will be sick.*	ā̃lsum-wēt-kitl, *they will be sick.*

The form—

ā̃lsum-tlkan kitl, *I shall be sick,*
ā̃lsum-tlkatl kitl, *we shall be sick,*

is also employed, but conveys a sense different from the other.

Periphrastic Form.

Entc'pEtḗnōcim kwendj hōz ā̃lsum, *I think I am going to be sick.*

Negative Forms.

Qoāz kwendj wā ā̃lsum, *not I am sick.*
Qoāz kwacū ā̃lsum, *not thou sick.*
Qoāz kwa-tlkatl ā̃lsum, *not we sick.*
Qoāz kwendj wā qā́tlEmīn kwendj wā ā̃lsum, *not I am desire I am sick, or I don't want to be sick.*

Conditional Forms.

Etl-tcākwan-En tcEā́ tē ā̃lsum-tlkan kitl, *If I eat this I shall become sick.*
Etl-ā̃ls'mEn kitl, *when I am sick.*
skánas kwendj wā ā̃lsum, *I may be, or perhaps I shall be, sick.*

Miscellaneous Forms.

Qoāz kwendj wā áloc kwendj ā̃lsum, *I am not often sick,* verbatim, *not I am often I sick.*
pā́pEt-kan klō wā ā̃lsum, *I am often sick.*
wā-kauq-ha-ā̃lsum ? *are you sick.*
wā-tlkan, *I am.* Qoāz, kwendj wā ā̃lsum, *no, I am not sick.*
wā-ha ā̃lsum ? *Is he sick?* wā, *yes,* or *he is.*
plan tlkan-wā-ā̃lsum, *I have been sick already.*
tai hṓi-ā̃lsum, *I shall be sure to get sick.*

Interrogative Verbs.

Năc, *go.*

Present Tense.

I go, nắc-kan.	*we go,* nắc-katl.
thou goest, nắc-kauq.	*you go,* nắc-kálEp.
he, or she goes, năc.	*they go,* năc-wēt.

The past of this could be rendered by adding the locative particle *tō* to the present forms, but the past of this verb is not customarily used. They employ instead the verb tcĕ́oq which has a double sense of "to go" and "to come." Thus "I went" would be rendered: tcĕ́oq-kan-tō. The other "persons" would follow in like manner.

Future.

nắc-kan kitl, *I shall go.*
nắc-katl kitl, *we shall go.*

The other persons follow regularly in like manner.

Conditional Forms.

skánac-kitl kwEns-näc s'Entc, *perhaps I may go.*
skánac-kitl kw'c-näc tcūs'nū́wa, *perhaps thou mayest go.*
skánac-kitl klō-kw'c-näc snītl, *perhaps he, she may go.*

Imperative Forms.

näc, *go.*	näc-kauq, *go you.*
näc-kauq, *go you.*	näc-matl, *go !*

Miscellaneous Forms.

ā́matl nā́c-auq, *you had better go.*

In this expression the adverb ā́ma takes the imperative inflexion.

kwendj-näc, *that I should go.*
nētl kitl 'tlō-ens-näc, *then will I go.*

In the N'tlakapamuQ we find two distinct copulative pronominal forms, one used exclusively with intransitive and one with transitive verbs. We have two forms also in the Stlatlumh, but they do not appear to be employed in this way in this dialect. I can find no rule for their use other than that I have given under "substantive verb." In some expressions they appear to be used interchangeably.

ACTIVE VERB.

Present Tense.

cíkEn, *to strike.*

I strike, cíkEn-tlkan ;	*we strike,* cíkEnÉm (wicnḗmutl.)
thou strikest, cíkEn-tlkauq ;	*you strike,* cíkEn-tlkā́lEp.
he, or she strikes, cík'nac ;	*they strike,* cík'nētac.

Past Tense.

cíkEn-tlkan-tō, *I struck.*	cíkEnÉm-tō, *we struck.*

The other persons follow regularly in like manner.

Future Tense.

cíkEn-tlkan kitl, *I shall strike.*	cíkEnÉm kitl, *we shall strike.*

The other persons follow regularly in like manner.

Imperative Forms.

strike ! cíkEn ! *strike now* ! cíkEnmatl ! or cíkEn wā-matl !
strike you ! cíkEn ē matl or cíkEn-é-wā-matl ! or hōhṓmatl cíkEn !
let me strike it, s'ntcás kō cíkEn-tā́lē.

Obligative Forms.

I must or ought to strike it, tē cíkEn-tlkan.
you must or ought to strike it, tḗ cíkEn-tlkauq.
we must or ought to strike it, tē cíkEnÉm.

Conditional Forms.

when I strike, kwendj plan cíkEn.
when thou strikest, kw's plan· cū cíkEn.
when we strike, kw's plan cíkEnEm.
when you strike, kw's plan-'lEp cíkEn.

Optative Forms.

I wish I could strike it, nE^{s}-qat·l or 'nsqat·l kw's cíkEn-En.
I wish we could strike it, nE^{s}qat·l kw's cíkEn-Em.
I wish thou couldst strike it, nE^{s}qat·l kw's cíkEn-auq.
I wish you could strike it, nE^{s}qat·l kw's cík'nálEp.

Interrogative Forms.

Did he strike it? cíkEn-ac wentc? or cíkEn-ac-ha?
Yes, he struck it, cíkEn-ac.
Did you strike it? cíkEn-kauq wentc?
I did, wā́-tlkan.
Ought we to strike it? hōz wentc cíkÉn-Em?

Deprecative Forms.

Please don't strike it, s'áluks Qoāz kwā́cū cíkEn.
Please don't strike me, s'áluks Qoāz kwā́cū cíkEntc.

Reciprocal Forms.

Let us strike one another, hṓī-tlkatl-cíkEn-tūā́l.
they fought each other, ka Hāz-tūā́l-wḗta.

Iterative Forms.

I am repeatedly striking it, wātlkan cíkEckEn.
we are „ „ wātlkatl cikcíkEn-Em.
thou art „ „ wātlkauq cíkEckEn.
you are „ „ wā-tlkalEp cíkEckEn.

It is interesting to note that the duplication for the first person plural is different from that of the others.

Negative Forms.

Present Tense.

I do not strike, Qoāz kwendj wā cíkEn.
thou dost not strike, Qoāz kwắcū cíkEn.
he does not strike, Qoāz kwā cíkEn-ac.
we do not strike, Qoāz kwā cíkEn-Ém.
you do not strike, Qoāz kwālap cíkEn.
they do not strike, Qoāz kwā cik' nétac.

Past Tense.

I did not strike, or *I have not struck it,* Qoāz kwendj wā-tō cíkEn.
we did not strike it, Qoāz tō-kwā cikEn-Ém.
Don't strike it! Qoāz kwā cū cíkEn!
Don't strike me! Qoāz kwā cū cíkEntc!

Infinitives.

to strike, cíkEn; *to have struck,* cíkEn-tō.

Passive Voice.

Struck, cik.

Present Perfect Tense of Accidental Action.

I am struck, cikstōmHālEm.
we are „ cikstōmólEm.
thou art „ cikstōmém.
you are „ cikálEp.

Present Perfect Tense of Purposive Action.

I am struck, cikEntcálEm.
we are „ cikEntōmólEm.

Recent Past Present Tense of Accidental Action.

I have been struck, cikstṓmHālEm-tō.
we have „ cikstōmólEm-tō.

Recent Past Perfect Tense of Purposive Action.

I have been struck, wā-tō-cíkEntcálEm.
we have „ wā-tō cikEntōmólEm.

Remote and Past Perfect of Accidental Action.

I have been struck, cikstōmHālEm-tō...ō'.
we „ „ cikstōmólEm-tō...ō'

The longer the voice dwells upon the final vowel of the tense suffix, the more remote is the action.

Immediate Past Perfect of Accidental Action.

I was struck, wā kā cikstōmHálEma.

we were „ wā kā cikstōmṓl'ma.

Immediate Past Perfect of Purposive Action.

I was struck, wā cikEntcálEm.

we were „ wā́ cikEntōmṓlEm.

Pluperfect.

cik-kan-tō, *I had been struck.*

cik-katl-tō, *we* „

Future.

cík stōmHálEm kitl,	*I shall be struck*			(accidental action).
cík-kan kitl		„	„	(purposive action).
cík-tōmṓlEm kitl,	*we*	„	„	(accidental action).
cík-katl kitl,	*we*	„	„	(purposive action).

cíkEn-tcūt-kan kitl, *I shall strike myself* (*if I do this*).

---

ka cikEn-tcūt-kan, *I struck myself* (accidentally).

cíkEn tcäl mac kitl, *I shall be beaten.* (*I know I deserve punishment.*)

Etl c'k-an kitl, *If I am struck.* Etl c'k-at kitl, *If we are struck.*

Miscellaneous Phrases.

I burnt it, rṓlEn-tlkan.

I burnt my hand, k·wEtlpäkä-tlkan.

I burnt it all up, rṓlEn-tlkan-tō tákEm.

I must go soon, käläl kwendj näc, or 'ntlōs natltc nEcnäc.

The moon will rise soon, käläl tcítlEps tē k·'lánämtEna.

one dog, pála sḳáḳa.

two dogs, án'wäc sḳáḳa.

few dogs, Qoāz sḳáḳa (?)

many dogs, Qōait sḳáḳa.

every dog or all dogs, tákEm ē sḳáḳa.

no dog, Qoāz kátī kwa sḳáḳa.

one hat, 'npEpElaúk·Q, or pála kamṓt.

two hats, án'wac kamṓt or nan'wacaúk·Q.

all the hats, tákEm ē kamṓta.

no hat, Qoāz kátī kwa kamṓt.

one house, pála tcítQ, or palälEtc.

two houses, ánūwac tcítQ, or 'n'wacél'tc.

one stone, pā́la kÉtla or pälälitc.
is it a stone? kÉtla-ha tī̀ ?
is that a stone? kÉtla-ha tEṓ ?
this is a stone, kÉtla tcEā́.
which stone? nētl kūnkā́ kÉtla ?
Is that a black stone? kwōqkwḗEq-ha tē kÉtla ?
what kind of stone? stäm tē kō kÉtla ?
I have a dog, wā-tlkan Ecḳäḳa.
you have a dog, wā-tlkauq Ecḳā́ḳa.
we have a dog, wā-tlkatl Eckā́ḳa.
we have some dogs, wā-tlkatl En-kEtltc'-sḳā́ḳa.
he has some dogs, wā EnkEtltc-sḳā́ḳa.
my dog is black, knōqkwḗEq tEn sḳā́ḳa.
your dog is white, sḳā́ḳacūwa puk.
my hat is on the table, tEn kamṓta wā Esk·él, or wā Eck·él tEn kamṓta.
in the box, 'n tī hutc'ma.
where is my hat? Énka tō nÉna-kamṓta ?

Note here the use of tō, the locative adverb "there," to express absence of object; nEn, is the "absent" form of the possessive pronoun, and the final *a* attached to it is the interrogative sign.

on that stone, En tEṓ kÉtla.
sit near me, mḗtcak Ec-tla s'Endj.
come with me, cḗma Ec-ṓlōc s'Endj ; or cḗma ē'wä Ec-Endj (or ÉntcEm).
come home with me, ṓqwEl ḗwä Ec-Endj.
I will go with you, nac-kan ḗwä Ec-nū́wa, or nā́ckan ḗwä mḗntcin.
let us build a house, Hṓi wē mēcā́l'tc.
let us make something, Hṓi wē mā́īt.
let us build a canoe, Hṓi stṓī mē caúEtl.
let us go there (several people), Hṓhōictūē tūṓ, or Qíatcūc EtE-ṓ tūṓ.
let us go there (two persons only), Hōhōic EtEṓ tūṓ, ōr Qíatcūc EtEṓ túṓ.
come here, cḗma Etcā́.
come this way, EntcítEm Etcā́.
the moon is bright, tcitletctlEm tē k·'lā́nämtEna.
the day is clear, qṓqoqkwEm.
it is cloudy, Esk·um'p, *ad litt. he* (meaning the sun) *is shut up.*
he is making a fire, wā pā́m'cEm.
give or bring me the dog, cêmac sḳā́ḳacū́wa.
are you cold? tcṓtlōmskauq wEntc ?
yes, or I am (in reply) wā or ē.
is he sick? wā wEntc ā̃lsum ?
he is, wā, or wā ā̃lsum ; *no,* Qoāz, or Qoāz kwäc ā̃lsum, *no, he is not sick.*
is your father dead? zōk-tō wEntc nē skā́tzacū́wa ? *yes,* ē ; *no,* Qoāz.

is he coming? tcEác kitl?
when did you come? ēkā́nmacac Etl tlḗakauq? *yesterday,* ē nā́tūQac.
when you come in shut the door, nEkēuq tcantlkauq tlṓtlwauQ.
when did you kill it? ēkā́nmacac Etl-zṓkcauq?
when will you kill it? kānmacác kitl Etl-zṓkcauq?
when you are sick you must take medicine, Etl ā̃lsumauq kā́lwatEntlkauq.
when the dog saw me he ran away, átsqEntcac sḳā́ḳa Qṓlil méntcEc.
when it rains I stay in the house, kan-tlō Ec-ṓtlōq Etl tlō Ec-kwīc.
would you like some meat? Qoāz-ha kwa-cū-qat·lmēmkō tcē?

The Salish tongues always employ the negative form in questions of this kind, thus; would you *not* like some meat?

I must drink, ken-ṓkwE.
I ought to drink, ā́ma kwendj ṓkwE, or ā́matl ṓk-an; *verbatim,* it is good that I drink.
I am eating meat, ken-tcē tcīnEm.
which is your dog? nētl kō Énka sḳā́ḳacū?
he stole my dog, nauk·Hētcec tEn sḳā́ḳa.
he stole your dog, nauk·Hētcēhac sḳā́ḳacū́wa.
he killed my dog, zṓkcEc nEn-sḳā́ḳa.
I lost my dog, pílip-tlkan nEn-sḳā́ḳa.
he lost his dog, pílipcEc nē sḳā́ḳaca.

(The function of *nEn* and *ne* in the last three sentences, will be understood by referring to the possessive pronominal forms.)

it is raining, wā kwīc.
it rained yesterday, wā kwīc ēnā́t'Qac.
it will rain to-morrow, kwīc kitl nā́tūQ.
it may rain to-morrow, kwīc kitl Etl-p'cīl-Ec.
if it rains I shall not go, Etl wic kwīc Qoāz kwendj wā näc.
where are you? Én-ka Etl-wā́-auq?
I am here, En-tcEā́ wā́-En.
where do you live? Én-ka tlauq-wā?
I live here, En-tcEā́ tlṓ-En wā.
I live at Port Douglas, En-kō Port Douglas tlō-En-wā.
where is John? En-ka tō kw'c John?
he stays in that house, En tūṓ tcítQ tlō wā́-ac.
he is down on the beach, Enkōṓ tcū́qtca.
I fish, ken-tcō k·wāzEm; *a fisherman,* tcāk·tzṓkwazEm.
are you coming? tcEā́c-kauq kitl wEntc?
I often go there, pā́pEt kwendj wā näcātE.
come in, cḗma ṓtluq, or ṓtluq tlō.
did you shoot a deer? kōc qitkauq wEntc tē sk·lṓla?

is it dark? k·lÉpEt·l'pEm aitl?

I want you to go, nEsqat·l kwä cū-näc.

it is Harry, nētl Harry.

once he came to my house, pá́la tō kw'c tlḗakuc ÉtEn tcítQ.

when I came in the man was lying on the bed, tlḗak-kan ṓtluq wā Ec-ā́qaitc skaíaQa.

I saw him when I went out, ā́tsqEn tlkan Entlac Ens-nā́c ṓtska wā Ec-ā́qaitc.

I am hurt, qan-tlkan.

you have hurt me, qantctōmHkauq.

who made this? cūwät kō mā́itcintā́lē tcEá?

I did, c'EntcE; *he did,* c'nītl.

he has killed it, zōkE-nōQ-c.

I want some water, ken-qat·lmin kōkō.

he said he was going, wā-tcūt kwäs näc.

I am hunting (habitually) wa-tlkan-pḗEkEm.

I hunt, ken-pḗEkEm.

I dance, ken-mṓtsōm.

I sing, ken-klḗlēm, or ken-ētlEm.

this house, tcEā́ tcītūQa.

that house, tō tē lā́ka tcítūQ.

these houses, ḗ-za tcítūQa.

these houses, ḗ-tlō tcítūQa.

those houses, ē-lā́ka untEṓ tcítūQ.

right eye, 'nzEhā́lōca.

left eye, 'ntcuk·ā́lōca.

both eyes, tūacā́lōs.

right ear, 'nzEhalā́na.

left ear, 'ntcuk·wEā́na.

both ears, ē 'nkléna.

right hand, n'zEhāka.

left hand, 'ntcuk·wā́ka.

both hands, ē 'nkwEkÉcta.

right foot, tEnsáka.

left foot, tEnsḗk·^{u}äka.

both feet, ē 'nskwā́qta.

MYTHS AND TRADITIONS.

Kaiyā́m.

Kaiyā́m	wā	cEḗcitkEn,	nḗ-tlōs	wā́äc,	Ec-tcítūQ	kw'c	Kaiyā́m.
Kaiyā́m	**was**	**"keekwilee"-house,**	**then**	**she lived there,**	**it-housed**		**Kaiyā́m.**

Rap	aitl,	nḗ-tlōs	ro-itc,	nḗ-tlōs	kwElḗkwilauqc	nḗ-tlōs	tcḗQEc	Étē	kṓa.
Evening	**now,**	**then**	**she slept,**	**then**	**dreamed-she,**	**that**	**went-she**	**into-the**	**water.**

P'cīl aitl nḗ-tlōs Qā́kEc, nḗ-tlōs mḗtcakc, nḗ-tlōs tā́tlEliHc, nḗ-tlōs aitl
Morning now then awoke-she, then got-up-she, then stood-up-she, then now

mā́tukc, 'ntcḗtEm auk·^{u} kō kṓa, nḗ-tlōs tcēQEc auk·^{u} kō kṓa, nḗ-tlōs
walked-she, entered-she into the water, then went-she into the water, then

mḗtcakc En tī cícaktca. Tcḗlacac tē skwEḗkwilauqca, nē-tlōs átsuqEnac
sat-she on the bank. She-did-like as-in the dream-her, then saw-she

tē stzṓkwāza 'nkwṓnam stzṓkwāza. Nḗ-tlōs kälā́qcaca nē skwEḗkwilauqca.
a salmon (a) soft-roe salmon. Then recalled-it-she the dream-her.

Nḗ-tlōs kwā́nac tē wík·EtEnca, nḗ-tlōs tcerā́niknac, nḗ-tlōs kwā́nac tē tzaqēlā́ca
Then took-she the knife-her, then cut-it-open-she, then took-she the long

tē kwṓna, nē-tlos tzäwā́nac, nā́kEnac skūkumḗit, nē-tlōs tcū́nac kw'c
the roe then washes-it-she transforms-it-she a baby, then bade-she-it

ḗlalc. Nē-tlōs tcūnamtcanac "n'kṓkwa" tcūn. Nē-tlōs tcūts tē
to cry. Then taught-her-she "my grandmother" to say. Then says-she the

skūkumḗta "n'kṓkwa." Nē-tlōs mṓlāc kwā́nac tē slāk·ēk·alā́ā tlEl kē
baby "my grandmother." Then again took-she the short

kwṓna, nē-tlōs tzäwā́nac, nē-tlōs skūkumḗil wḗyliHs. Nē-tlos tūkEnac,
roe, then washed-it-she, then a baby becomes it. Then took-them-up-she,

kíla ā́ma tc'p'tḗnōcimca. Nē-tlōs tā́tlEliHs, stúkcEc tū́ācakamínes ē
very good feelings-her. Then stood-up-she, held-them-she in-both-arms the

umḗmatsca.
grand-children her.

Nē-tlo aitl cnäcitc Éti tcítūQca, nē-tlos kḗtcēnac, ā́mac skwā́kūkca.
Then now goes-in-she the house-her, then puts-them-down-she, good-is heart-her.

Ne-tlōs ā́mac kwā́cEc átsuqcEc. Nē-tlō aitl lālíltamī
Then well cares for-them-she looks-after-them-she. Then now become-big

ḗmatsca Skaiyám. Nē-tlōs ā̂lsEmc, nētlōs kwālū́tEc Skaiyam
grand-children of Skaiyam. Then sick-becomes-she, then speaks-she Skaiyam

kwālū́tcEc ē umḗmatsca: Etl-zṓk^{u}an nacHEckÉlEp tEn zṓtcEmina,
instructs-them-she the grandchildren-her: When dead-I am take-me-you my red-paint,

mṓta tEn Qéaukca, mṓta tEn tōtlkīca, mṓta tEn qoéta, mṓta tEn tcēÉkutEna,
also my black-paint, also my stone-hammer, also my wedge, also my spear,

mṓta tEn hṓmita, mṓta tEn k·lā̃za, mṓta tEn lúkwa, mṓta tEn nEwanḗkEna.
also my paddle, also my canoe, also my basket, also my fisher-skin-head-dress.

Etl-zṓk^{u}an EtEṓ Elt-näctamkÉlEp tī stcḗlukca; q'ṓcin kEtl eskaít nē-tlōs
When I am dead yonder then go-you that point; four shall be days then

nE-zōk. QEṓcin nác-kut nē-tlōs zṓk·^{u}Ec. Nē-tlōs kwánEm ē umḗmatsca
my-death. Four went-by then dies-she. Then take-her the grandchildren-her,

nē-tlōs 'ntlamánEm En tē k·lā̃zca, nē-tlō aitl nác-tam Étī qatlmēnáca. Nē-tlō
then put-her in the canoe-her, then now take-her where desired-to-go-she. Then

aitl tcéuks-tom Ékē umḗmatsca tā́kum ē stEm-tÉtEmca. Nē-tlō aitl
now placed them by the grand-children-her all the belongings-her. Then now

qḗlēnEm EntlEmtlam En te k·lā́zca Skaiyam. Tcūq aitl kw'c k·Ék·ainEm
haul-her-up lying down in the canoe-of Skaiyam. Finished now putting-her-away,

nē-tlō aitl tl'wélnEm Ékē umḗmatsca. Kamatlákū sk'úmpa;
then now she-is-left-behind by-the grand-children-her. It-is-a-beautiful-day warm;

ṓqwEl-wēt aitl. Nē-tlō aitl ṓqwEl-ē, tcéoq-wEt aitl tē tcítūQ-ḗha; tē tcítūQ-ḗha
go-home-they now. Then now home-they, go-in-they now the house-their; the house-their

cḗcītkEn. Nē-tlos ḗlal-ē; nē-tlōs rōit-ē. P'cīl aitl nē-tlōs
is-a-"keekwilee-house." Then lament-they; then sleep-they. Morning now then

mḗtcak, nē-tlōs ṓtska snúkuma, nē-tlōs k'umps, nē-tlōs ṓtskac tē skīlämqa.
sit-up, then outside (the) sun, then warm, then goes-out-she the elder.

Nē-tlōs tcéoqEs aúkᵘältzuka, nē-tlōs mḗtcaks, kamatlā́kū sk'umpa,
Then went-she to-a-distant-point, then sat-down-she, the-day-is-beautiful warm

nē-tlōs kanḗmEc kwāwEaú, nē-tlōs kalā́nEc, nē-tlōs kanḗmEc, nē-tlas kō tē
then hears-she, shouting, then listens-she, then hears-she, it-was erst-while the

kwṓkwaca wanhEnhEm. Nē-tlō aitl skwā́lnEc tē cickwōza:
grandmother-her calling-out. Then now asks-she the younger sister:

"Ti Qōnauq-ha-tlō zōkc Skaíyam?" "Qonauq-tlō zōk. Qōnauq-tlō zōk sEā́lukc."
"Is it true dead Skaíyam?" "It-is-true dead. Yes dead sir."

Nē-tlō aitl HátElīH; nē-tlōs qḗlēnEc tē k·lâzca; nē-tlō aitl s'tcEcā́its, nē-tlōs
Then now lands-she; then hauls-she the canoe-her; then now comes-up-she, then

ṓtluqs tē síyuktca, nē-tlōs kwā́näc tē slauwḗna, nē-tlōs tcäkwā́nac. S'tcEā́c
goes-in-she the girl, then takes-she the mat, then spreads-it-she. Enters-she

aitl ṓtluq utc ḗcilkEna; ne-tlō aitl mḗtcakc En tc' slauwḗna. Nē-tlōs
now into the "keekwilee-house"; then now sits-down-she on the mat. Then

kwā́näc tē HElā́ka, nē-tlōs nā́citc 'nzaúQom tē skílämqa; nē-tlōs k'cnā́näc,
takes-she the water-basket, then went-she for-water the elder-one; then bade-she,

nē-tlōs tcū́nac: "nac kwäm kw'c p'ā́mic Ekṓ-älsEkā́." Nē-tlōs k·lḗEkcEc,
then said-she: "go get some fire-wood outside-there." Then comes she,

stukcā́c ē spā́mica. Nē-tlōs tcū́nEm Étē kEqkEqca "pā́m'cEm atl!
brings-she much fire-wood. Then bidden-she by the elder sister-her "make-up-the-fire!

kauwōkmatl!" Nē-tlō aitl kwā́näc tē skílamqa tē nōkwā́tEna, nē-tlōs
heat-the-cooking-stones!" Then now took-she the elder-one the cooking-basket, then

'ntlā́kwänac, nē-tlō aitl tcēQaím. K·wol aitl. Nē-tlōs kwānäc, nē-tlōs
put-in-water-she; then now boils. Cooked now. Then took-she, then

EnkētcanEkEnac, nē-tlō aitl tlṓmic tē skaíEqwa Qoāz kwācka ḗcaucā́ca
placed-before-him-she, then now spoons-it-he that man not able to chew

ē skam'ca; wā-tlō-eslaúwa Etl-wiclā́kwoncEc ē skám'tca. Tcū́k·walitc
the roots; he-covered-up-his-mouth when-he-spat-out-it the roots. Finished-eating

aitl tē skaíEqwa; nē-tlōs tátlElīH, nē-tlōs kwiskwícits; nē-tlōs ōtskac-tō
now that man; then he stood up, then dropped them; then outside-went-he.
(the roots)

Nē-tlōs atsuqEnac tē tcE lílina ē skám'tca; nē-tlōs tcūts: "wā-kā́nEn
Then perceived-she the younger the roots; then said-she: "why

ke Qoāz kwac sákwanac ē skam'tca?" Nē-tlōs tcūts tē skílämqa:
not eat-he the roots?" Then said the elder:

"KE-wic-kānEn." CnEmpmok· kō ā tē nūwanēkEna tē skaíEqwa,
"I don't know why." Bound-around-head with a fisher-skin that man,

Ec-mEtcóc Étē zótsEmina, móta tē QéEqca tcE mEtcóctca, Ec-tlūk·ēin,
mark-face-he with the red paint, also the black-paint mark-face-his, he-parts-his-hair,

enzúcak ko tē skaíEqwa, tē tléEka skaíEqwa Ékē k'umk'amaza. Rap
he-dressed-his-hair that man, that goes man with-the young-women. Night

aitl. Nē-tlō aitl áqētc-ē, Eskwutämetcūwēt tē skílamqa áqētc
now. Then now lie-down-they, they-have-intercourse-together the elder lies

'nzáEtlnēwEtcE tē skaíEqwa, áqētc tē tcElána tē 'ntcEk·^{u}átlnēwEtcE tē
on-the-right-side-of the man lies the younger on-the-left-side-of the

skaíEqwa. Nē-tlōs tcēmōcmínac tē skílamqa cimámic. Nē-tlōs k·lókōnac,
man. Then faces-he-towards the elder wife. Then embraces-her-he,

nē·tlós nōkménac aitl tcimám'ca. Tcūk·^{u}cEc tē skílamqa cimámic,
then has-intercourse-he now wife-his. Finished-with the elder wife,

p'Elkóccm aitl Etē tcEalána cimámic; nōkménac aitl tcE lána
he faces now to the younger wife; he-has-intercourse-with now the younger

cimámic. Tcūk·^{u} aitl, Ensk'am-maléoqcEm, róít-to-wēt aitl. P'cīl aitl, nē-tlōs
wife. Finished now, he-lies-breast-upwards, slept they now. Morning now, then

mētcak-ē nē-tlōs ótsk-ē tákum-wēt-tlō, tcéoq-wet. Nē-tlōs nácitc
get-up they then go-outside-they all-of-them, went out they. Then goes he

skaíEqwa EtEó kEkaúa. Nē-tlōs kwälútEc tcE lílina; nē-tlōs kwälútcEc tē
the man there away off. Then spoke the younger; then said-she-to the

kÉqkEqca: "Pūpaú-tlkan." "K·ailEm-tlkan-tlō tlēt, pūpaú-tlkan-tlō tlēt,"
elder-sister-her; "I am swollen." "The same I am too, swollen-I-am also,"

tcūt aitl tē skílämqa; "Etl-rápEc kitl móta cétict
aid now the elder; "when night-it-is shall-be next at-midnight

hōz-n'kúk·EzanÉkEnEm, nē tlōs zwotnEm kitl." "Nētl tcūwáca Ecmīcitc
let-us-make-him-laugh, then find out shall." Last-night his is closed-mouth

tlō-aíc-nEk·uk zánEk," tcūt aitl tcE lílina. Nē-tlōs tcútEc tcE skílämqa:
when-he-laughed," said now the younger. Then said-she the elder:

"áma." Rap aith; nē-tlōs áqētc-ē aitl; nē-tlō aitl nEk·uk·zánEk'n-ētāc.
"all-right." Night now; then lie-down-they now; then now tickle-him-they.

NEk·ukzánEk aitl tcúwāc mícitc, nEk·uk·zánEk aitl, cákEm aitl, tcūt aitl:
Laughing now his mouth-closed, laughing now opening now, he says now

"ha! ha! ha! ha!" Nē-tlō móta tcūts: "Tcūk·^{u}stōmHÉlī, s'ÉntcEm
"ha! ha! ha! ha!" Then also says-he: "Let-me-alone, it-is-I

nē-kwókwa-lápa." "Qoāz kwāc kÉnkan; Qoāz k·wāc tcūk·^{u}stómEna," tcūt aitl tcE
grandmother-you." "Not can stop; not can let-you-alone," said now the

skílamqa. Zōk aitl Skaíyam. P'cīl aitl, kwánac aitl skílämqa k·'tláliqEn,
elder. Dead now Skaiyam. Morning now, takes-she now the elder a-rope,

āzémEn-ētac Eck·wúmk·wum nē-tlō aitl túkEn-ētac, qātEn-ētac, mātuk
tie-up-they-her knees-drawn-up then now lift-her-up-they, raise-her-up-they, walk

'n tcētEm tcēoqwēt aitl; nē-tlō 'nslāmān-ētac tē k·lâzca tē k·lâza stcíma
to the water reach-they now; then place-her-in they the canoe-her the canoe big-tub
(the water)

skwātcitca. Nē-tlō 'nkauwanētac nEmkāl-wēt, tcēoq-wēt, aitl tEkokaūa nē-tlōs
its-name. Then set-off-they paddling-they, arrive-they now far-out, then

tukEn-ētac, 'nkumkwan-ētac, nē-tlō 'n'māactcE, nē-tlōs ōwÉlim'c;
lift-her-up-they, put-her-into-the-water-they, then she sinks, then bubbles-appear;

klelk·lolackōhEm aitl, EckwÉl. Ōqwel-wēt aitl, tcēoq-wēt Etc'
very-still-water now, it is balmy. Go-home-they now, arrive-they at the

ēcitkEn-ēha, nē-tlō hōzá-ē, tcúk·wēt aitl. K's-hōzá-ē nē-tlō
"keekwilee-house"-their, then get-ready prepared-they now. Being-ready-they then
for a journey,

ōtsk-ē, nē-tlō mātuk-ē 'ntcētEm kwinkumkéna stūaúkqa. Tcēoq-wēt aitl
go-out-they, then walk-they towards head of the creek. Arrive-they now

éwā-Ec-tcítūQ, ótluq-wēt aitl; wā skūkuméta, cEékwatl, mótā tē
where-was-a-house, go-inside-they now; there-was a baby, a-tiny-baby, also an

kutLmÉmina; Ec-nÉmEnEm tē kutLmÉmina. Wā-ēlal tē skūkuméta.
old-woman; she-was-blind that old-woman. It-was-crying that baby.

Nē-tlō tcūts tē k·āmaza, tē skílāmqa: "Tcūnac tē kutLmÉmina,
Then said the maid, the elder-one: "Bid-her the old-woman,
(to her sister)

cauQEnskaúqka!" "Qoāz kwEndj ka qítltca." "Ama, cauQ'némEtl,
wash-you-it!" "Not I can-do-it." "Very well, wash-it-we,
(replied the old woman)

rōit-kitl." "Áma." Tē skílāmqa nē-tlōs tátlEliHs, nē-tlōs túkEnac
it-sleeps-then-will." "All right" The elder-one then stood-up, then took-it-she
(answered the old woman). (the cradle)

k·ilkwānac, nē-tlōs kēanāc, nē-tlōs mētcakcEc. Nē-tlōs
placed-it-on-the-floor-she, then laid-the-baby-in-her-lap, then sat-it-up-she. Then

kwānac tē kōa, nē-tlō 'nklaúkwānac, nē-tlōs kēp'enEs tē
took-she some water, then poured-it-into-the-basket, then "tonged"-she the

k'umpál'tca, nē-tlōs tcípEnac, nē-tlōs kwānac tē kútla, nē-tlōs kítEnac tē
hot-stone, then heats-it-she, then took-it-she the stone, then lifted-it-she the
(out-of-the-water)

kútla, etl-caūQEnac aitl. Nē-tlōs tcūnac tē cíckwōzca: "Nac kwām kō
stone, then washes-it-she now. Then bids-she the younger-sister-her: "Go get a

zōkwóz." Nē-tlōs nācitc kwām kō zōkwóz. Qoāz k's-Hínic
piece-of-punk wood." Then went-she to get a piece-of-punk-wood. Not a-long-while

nē-tlōs tlēEkcEc tē zōkwóza. Nē-tlōs wétckētEc tē
then returns-with-it-she the log-of-punk-wood. Then hands-it-to-she the

cíckwōzca tē skūkuméta. Nē-tlōs QomEntcūtEc s'nītl aitl. Tē
younger-sister-her the baby. Then hurries-herself-off-she (with) it now. The

skílämqa 'n-āqḗtcEc. Tcūk·u aitl, nē-tlōs lauwonEc, ne-tlōs
elder one lays it (the wood)-down-in-the-cradle. Finished now, then suspends-it then she (the cradle),

QētcHḗtac tē kutLmÉmina tē cíla, nē-tlōs tcū́nac: "Qoāz-kwac-ōkwótcin
hands-she the old-woman the string, (for swinging cradle) then said-she: "Dont-you-touch-it

plan rṓit." Nē-tlō aitl ṓtskac nē-tlōs QomEntcūtEc, p'zā́nac tē
while it-sleeps." Then now goes-out-she, then hurries-she-herself, overtakes-she the

cíckwōzca, nē-tlōs kwā́nac tē skukumḗta skúkaiyūq. Nē-tlō aitl k·lEā́k-ē
younger-sister-her, then took-she the baby boy. Then now set-off-they

mā́tuk kakaúa; tcḗoqwēt aitl tē kakaúa, tcḗoqwēt aitl tē kakaúa,
walking a-long-way; they-went now a long-way-off, they arrive now a long-way-off,

mā́il-towēt tē tcítūQa, nē-tlō aitl cEwā́-ē. Nē-tlōs pEtḗnōsEm-ē Etl-stā́m-ac
make-they a house, then now stay-there-they. Then ponder-they what-kind-of

kálwEt kōQom rēyEp-stā́lī, kwānḗ-tac tē kálwEta nētl aitl
medicine quickly make-him (the baby) grow up, take-it-they the medicine then now

wā-cauQEn-ḗtac, nētl kō-klō aitl Qṓmec kw'c rḗEps; nē-tlō aitl lḗEltEmp'c;
washed-him-they, then thereupon now quickly he-grew-up; then now becomes-a man;

nē-tlō aitl Ec-péakEm.
then now he-goes-hunting.

Nē-tlās-tō-kauk·mÉtca ē nanwā́ca yukīyáktca, klō-Hḗn-kō kw'c Qōaic kwäc
It-is-far-away-they-are those two women, a-long-time that not he was

ḗlal. Rap aitl, tē kutLmÉmEna nē-tlōs tátlEliHs tcā́cänac
crying (the grandchild). Night now, the old-woman then stands-up she-felt-for-the-baby

klō, zōkwóz. Nē-tlōs Qaaúnac tē kw'tā́mitca: "Skwā——skwā——sEt
lo, a log. Then called-she the husband-her: "Skwāskwāset

pla——ne—kEnEn tē——ḗ—ma—tsa ka—tla"! Skwāskwāset kElā́mEc
changed the grandson our"! Skwāskwāset hears

tlō-wic-ḗnwEt kwa wEaú, nē-tlōs sákEnEc tē 'nwópqEnca, nē-tlōs nEkitcmḗnac
some-kind-of a noise, then pulls out a leg-hair-his, then puts-it-in-his-mouth

nē-tlōs ḗcaunEc, nē-tlōs p'tḗEkwuncEc Étē tōá réqup. Nē-tlōs tcuk·s, nē-tlōs
then he chews-it, then he spits-it-out into that water-fall. Then it stops, then

mṓta kElámEc Etl-kānḗm aitl tlō-wicḗnwEt cimā́m'ca, kanḗm aitl, nē-tlōs
again he listens if—hear now it-might-be-the-sound-of wife-his he-hears now, then

zōwā́tEnEc aitl. Nē-tlōs k·ētlḗliHc, tcḗoq aitl tē tcítūQca, nē-tlōs
he-understands now. Then he-starts-off, he-arrivest-at now the house-his, then

skwā́lmin cimā́m'ca: "nā́kEnEm tē ḗmatc-kátla zōkwṓz." Skwāskwāset nē-tlōs
she-tells wife-his: "changed the grandson-our log-of-punk. Skwāskwāset then

tcū́nac cimám'ca: "Kā́nEmc Oōaic kwā́cū ā́ma kwā́cū cEā́tsuqc tē ḗmatc-kátla"?
chides wife-his: "Why not you better you look-after the grandson our.

"Hōimatl-záqEntctṓmeH." ZáqEncEc aitl nē-tlōs näc-ē; tcḗoqwēt aitl
"Now-you-must-'pack'-me." (said old woman) He-packs-her now then go-they; get they now

kō ālsEka; nē-tlōs étlum'c tcE yākEtca: "Ríma, ríma, ríma, ríma,
outside; then sings she this woman: "Shorten, shorten, shorten, shorten,

n'ématc." Nē-tlōs rímaliHc, kanémEncEc tē ématc-éha kéEta
my grandson." Then the-path-is-shortened, hear-him-they the grandson-their at-little

tlas élals. Nē-tlōs kétcīnac cimám'ca; nē-tlōs k·étlēlc uk·ᵘ Ecwáca kwa
distance crying. Then he-throws-her-off wife-his; then runs-he to where-is the

élals. TcíQulmin kō klō, nē——tlōs mótac kaúaliHc tcEaís-kō élal kō kakaúa.
crying. He-is-almost-there, then again it-goes-far-off a receding cry far far away.

SkwāskwāsEt kElél aitl; p'ánEt aitl tléEkmēnac cimám'ca, nē-tlōs túkEnac
SkwāskwāsEt angry now; returning now he went to her wife-his, then took he

cimám'ca, nē-tlōs k·ō-tlukcánac. Tcūk·ᵘ aitl kwEc k·ōtlukcánac
wife-his, then he-jammed-her-nose-into-a-log. Finished now when jamming-nose-into-log

cimám'ca Etl-tcúnac aitl: "Etl-réEp-kauq-matl tsúkwa, skwátcītcū kōauit-kitl
wife-his then said-he now: "Become-you tsúkwa-plant, name-your hereafter

óqwElmīuq, tsúkwa kitl kwā snáhEntcéhacwēt, wa-kitl tzákwan-tcéhacwēt."
people tsúkwa shall they-call-you, it-shall-be eat-you-they."

SkwāskwāsEt óqwEl aitl, tceóq tē tcītūQca nē-tlōs wáac." Kléek· aitl
SkwāskwāsEt goes-home now, arrives-at the house-his, then stays-there. Comes now

tcE skózaca; nē-tlōs skwálnac. "Nē-ckózacūwa Ec-nák·ᵘ-tō nEnánwac
the daughter-his; then he-informs-her. "Child-you has-been-stolen-by two

cyukīyáktca." "'Nkátōzam nē-tcipalénca"? "Untoō. "Āma." Nē-tlōs
women." "Where-is-now cradle-his"? "Over-there." "All-right." Then

kwánac, nē-tlōs kétcinac, nē-tlōs kwánac tē qEláka, nē-tlōs nácitc
she-gets-it, then she-puts-it-down, then she takes the water-basket, then she fetches

'nzaúōm. "'Nká-tō nē-kutla"? "Untoó." "'Nká-tō nē-'ncaúQEmic"?
water. "Where the-heating-stone"? "Over-there." "Where the wash-tub"?

"Untoó." "'Nká-tō nē-kwisqÉna"? "Untoó." 'Nklaúkwänac aitl tē
"Over-there." "Where the-tongs"? "Over-there." She pours in water now the

'ncaúQEminca; nē-tlōs túkEnac tē kwisqÉna, k'épēnac tē k'umpálitca, nē-tlōs
washing-utensil her; then she takes the tongs, seizes the heating-stone, then

pótlōnac tē 'ncaúQEminca; kwánac aitl EntcáktEnca, nē-tlōs mólōnac, nē-tlōs
heats the washing-utensil-her; she-takes now the-napkin-her, then soaks it, then

k·lópōnac, nē-tlōs wóqwac, nē-tlōs élals, nē-tlōs túkEnac skūkuméta, nē-tlōs
she wrings-it, then it-drips, then it cries, then she takes up a child, then

caúQEnac skúkaiyuq, nē-tlōs nEaqétcEc, nē-tlōs laúwanac, nē-tlō aitl
she washes the-baby-boy, then she cradles-him, then she-hangs-it-up, then now

cE-āmac kwācÉc-atsuqcEc. Nē-tlō aitl lélītumpc. Nē-tlō aitl
it-is-well cared-for-and-looked-after. Then now he-becomes-a-youth. Then now

nácitc péEkEm; tceóq péEkEm; kléEk óqwEl. P'cil nac móta
he goes out hunting; he has been hunting; comes home. Next-morning he goes again

péEkEm; álsuqEnac tlō móta; kléEk óqwEl, skúmsatl skwátcitca. Skwálnac
to hunt; he-saw-him again; comes home, napkin-man name-his. He told

aitl tc' skéqōzaca: "p'zantlkan-tlo móta." "O n'ckóza nauk·-ménEm-tō
now mother-his: "met-I-him again. "O my son he was-stolen

nē-kátcikcúwa, Enán'wic cyukīyáktca nē-nauk·-mén-talī-ha-tō
the elder-brother-your two women they-stole-him-away-a-long-time-ago

nē-kátcikcúwa, nē-kátcikcúwa EsmEmEtcáz; En tī kōzápilca tē
the elder-brother-your, the elder-brother-your has-a-mole; on the cheek-his the

smEmEtcázca." P'cīl-móta nac móta péEkEm nētl aitl nEsQénac;
mole-his." The morning-following he goes again hunting it is now he-seeks-him;

kānémcEc tē wāamEéminEm skwiláten, nē-tlō aitl nác-ménac, nē-tlōs
he-hears-it the tapping-noise-of the wood-pecker, then now he-goes-towards-him, then

tcéoq-mēn-ac; nē-tlōs métcak-ē; nē-tlōs skwālútEc Skúmsatl. Nē-tlōs tcúnac:
he-gets-to-him, then sit-down-they, then spoke Napkin-man. Then said-he:

Snúwa-ka kwEn-kátcik, nauk·-mēnEm-kō-tō kwEn-kátcik
"You-must-be my-missing elder-brother, he-was-stolen-by my-missing-elder-brother

Enánūwac-kō-ē nauk·-mēn-talī-ha, auk·Eő tō-Etl-tlakstómac." "Wonaúq
two-women-they stole-him-long-ago over-there when-they-took-him-away." "True

cEéntcEm. Nác-kauq-tlō óqwEl, tcEáckau tlō móta nátūQ; nác-kan óqwEl,
I-am he. Go-you home, return-here again to-morrow; go-I home,

klēEk-kan kitl tlō móta Etcá Etlkan-rípaca nátūQ; snúwa kléEk-kauq Etcá
come-I will again here when-it-is-noon-of to-morrow; you come-you here

nátūQ nētl kitl tlō Ens-nác éūwa Ecnúwa." Óqwel aitl tē pápEla,
to-morrow then will I-go along with you." Went-home now the one,

óqwEl móta tē pápEla. Őqwel-wēt aitl. Tcéoq Étī tcítūQca móta tē
went home also the other. Went-home-they now. He went to the house-his again the

tcE lílina, óqwEl aitl, klēEk aitl Étī tcítūQca, skwál·nac skēqōzaca:
younger-one, he reaches home now, he enters now the house-his, he tells mother-his:

"Wonaúq nētl skózacū nē-wā-átsuqEn-En, wá-tcúntcas.
"True it is son-your (that) I-have-been-in-the-habit-of-meeting, he-bade-me

kwEndj-nac tlō móta nátūQ." Aqétc-wēt aitl k·lō Qoāz kwác róīt-tō-wēt
that-I-go there again to-morrow." They-go-to-bed now but not able to sleep-they.

P'cīl aitl, nē-tlōs métcakc, nē-tlōs hózac, tcúk·s hózac; nē-tlō aitl
Morning now, then he-gets-up, then makes-ready, finished making-ready; then now

nácitc, né-tlōs tcíoqac En-swā-čha-tō é-nátūQac; nē-tlōs átsuqEmps EtEő,
he-sets-out, then he-went to-where-far-off yesterday; then he looks over-there,

nē-tlōs átsuqEnac c'pElókwa, né-tlōs wác lā tā; Ec-métcak. TcE snauk·^{u}E-tóā
then he-sees smoke, then he stays there; he-sits-down. The stolen-youth

tcéoq Étī tcítūQca nē-tlōs āqétcEc nē-tlōs p'ténōcEm auk·^{u}
went to the house-his then he-throws-himself-on, his bed then he ponders upon what

Etl-kácEc ē tcEmál'tca; nē-tlōs pónac auk·^{u} Etl-kácEc kitl. Nē-tlō
he should-do-with the family-his; then determines upon what-do-he will. Then

aitl nácitc k·ólEm kō kwéauH; pónac aitl ē kwéauHa, kwánac
now he-goes-out looking for some pitch-wood; he finds now much pitch-wood he-takes-it

aitl, ṓqwEl aitl, tcḗoqcEc aitl, suksúkEnac; tcūk·ᵘ suksúkEnac,
now, he goes home now, he arrives with it now, he-splits-it-into he finished splitting,
small-pieces;

nē-tlōs ṓtlūqcEc, nē-tlōs kā́kanac; tcūk·ᵘ kw'c qaílEms
then he takes it into the house, then he-dries-it-over-the-fire; finished when doing

atī; nē-tlō aitl āqétc, Qoāz tlō aitl rō̃ītc. P'cílac nánatūQ,
this; then now he-lies-down, not now sleeeps-he. It is morning just daybreak,

nē-tlōs mḗtcakc, nē-tlōs kwānac tē skílämqa cimämic, nē-tlōs k·'ménac,
then he-gets-up, then takes-he the elder wife, then throws-her-on-ground,

nē-tlōs mätukc nákEliHc s'tlātlálEm. QaítlcEc tlō mṓtā tē tcElílina
then she-walks-off changed into a grizzly-bear. He serves likewise the younger

cimámamic, nákEnac tlō mṓta mḗqatl. Tcūk·ᵘ kw'c qaitlcEc átī ē
wife, he changes-her also a black-bear. Finished when doing-to this the
into

c'mámam'ca, kwánac aitl ē-tc'-mälitca, nē-tlōs pṓnac, nē-tlōs caúk·ᵘEc
wives-his, he takes now the children-his, then he blows, then fly-away

c'p'Épāzōza wḗliH. Tcūk·ᵘ aitl kw'c qaítlcEc átī ē-tc'-málitca nē-tlōs kwánac
little birds becoming. Finished now when doing-to this the family-his then he takes

ē kwḗauHa, rólnac. Nē-tlō aitl tcEácitc, tlḗuk aitl
the pitch-wood, he burns-down-his-house. Then now he-leaves, he comes now

En-tcūwā́ca tē cickwṓzca. Pṓnac tē cickwṓzca. Ō̃qwEl-wēt
where was-his the younger brother his. He finds the younger brother-his. Go-home-they

aitl; tcḗoq-wet tē tcítūq-ḗha, nē-tlōs wā-ḗ En tī tcítūq-ḗha.
now; arrive-they the house-their, then stay-they in that house-their.

This is an extremely interesting and valuable text from a syntactical point of view. It gives us an excellent insight into the structure and idioms of the StlatlumH speech. The story is not a new one, but the StlatlumH version differs in many interesting particulars from that I collected from the StsEélis. It also rightly belongs here, being a StlatlumH myth.

ENGLISH EQUIVALENT OF ABOVE.

Kaiyam lived in an ḗcitken (a subterranean winter dwelling) all by herself. One night she had a peculiar dream. Next day she went down to the water and sat upon the bank thinking of her dream. Presently she saw a soft-roed salmon, and recalling what had transpired in her dream, she set about enacting it over again. She took her knife and cut open the salmon, carefully taking out the long roe and washing it. She then transformed it into a child, teaching it how to cry. She then taught it to call her "grandmother." She then returned to the fish, and taking out the short roe, treated it in like manner. She now takes the two children, which are both girls, in her arms and carries them into her house. She is very happy in her possession of them. Thereafter she takes great care of them, and they soon grow to be big girls. When they are grown up, Kaiyam falls sick.

She makes preparations for her death. She calls her two grand-daughters to her and tells them she is about to die, and what they are to do for her when she is dead. "Put all my belongings with my body," said she, "my red paint, and my black paint, my stone hammer and my wedge, my spear and my basket, my paddle and my canoe, and also my fisher-head-band, and take me to yonder point, and place me and the things there. In four days I shall be dead." When the four days had gone by Kaiyam died. Her grand-daughters treat her as she had bidden them. They place her body in her canoe, and take it and all her other belongings to the spot she had designated. Then they left her and returned home. Then they weep and lament for her till bed-time. Next day they rose early. It was a lovely morning, and they went outside and sat down. As they sat they heard someone shouting. It was their erstwhile grand-dame, who had not really died, but merely shammed death for purposes of her own; and she now appeared in the character of a man. The visitor called out, addressing the younger of the sisters, "Is it true that your old grandmother Kaiyam is dead?" "Yes, sir," she replies, "it is quite true; she died yesterday." The visitor now lands, hauls up his canoe and comes forward. One of the young women now enters the house and spreads a mat for the visitor to sit upon. He presently enters and sits down upon the mat. The elder sister now takes her water basket and goes out to fetch some water to cook the stranger a meal. She bids her sister get some firewood and make a fire, and heat the cooking stones. This she does, and the elder then prepares a meal of roots. When it is ready they place it before their visitor, and he takes a spoon and begins to eat. Now, being really an old woman, the seeming young man had no teeth wherewith to masticate the roots, and as he had to hide his face with his arm while he ate, that the girls might not see his vain efforts to chew the roots, he held his blanket up to his mouth from time to time that he might spit them out. Presently he finished his meal and stands up. As he does so, the discarded roots fall to the ground. He now goes outside for a while. When he had gone the younger of the girls perceives the root he had spat out, and, calling her sister's attention to them, asked her why he had not eaten them. "I don't know why," replied she. The old woman now decorates herself, putting on her mystic fisher-skin head-band, and painting her face with the black and red paints, and parting and tying up her hair like a man. She then returns to the young women. Evening arrives, and they prepare to retire for the night. The visitor shares the bed of the sisters, lying between them. He has intercourse with them, first with the elder, and afterwards with the younger. In order to effect this, Kaiyam had used her pestle hammer as a genital organ. Next morning when they get up, and Kaiyam has gone outside, the younger woman says to the elder, "I am very much swollen in my genitals." The other replied, "So am I"; and their suspicions are aroused as to the genuineness of their new husband's manhood. The younger one seems to have suspected that some trick of their old grandmother Kaiyam was being played upon them, and she suggests taking measures on the following night to discover if their husband was what he seemed to be. "When midnight comes," said she, "let us tickle him and make him open his mouth. I have noticed he always keeps his mouth shut when he laughs." The elder agreed, and the following night the two women set upon Kaiyam, and tickled her so vigorously that in the end she is obliged to open her mouth and cry for mercy. She prays them to stop, but they will not; and, being in danger of being tickled to death, in self defence she declares her identity, crying out, "Oh! leave me alone, don't tickle me any more; I am your grandmother Kaiyam." When they hear this, instead of ceasing they continue to tickle her the more, until she dies under their hands. The following morning the elder sister takes a rope and ties the old woman's body up for burial. They then take the corpse down to Kaiyam's canoe (which was really a big cooking tub, and not a canoe at all) and paddle off some distance upon the water with it. They then cast the body into the water, and it sinks down and disappears for good, the air bubbles rising as it sinks. Then they return home again and make preparations for leaving the old place. When ready they start off, and in time get to the head of the creek. There they perceive a house, which they enter. Within they find an old blind woman and a baby. The latter is in its cradle, which hangs from the swinging pole, and it is crying and sobbing. They go to see what is the matter with it. Said the elder, "It wants to be washed; tell the old woman to wash it." When the old woman is told what ails the child, she replies, "I am blind; I cannot see to do it." "All right," said the elder of the young women, "I'll wash it for you, and then it will go to sleep." "Very well, do so," replied the old woman. The young woman then took the cradle down, and began to make preparation for washing the child. She poured the water into the kettle, put the stones in the fire to heat, and when they were hot, heated the water with them and washed the baby. As she did so she bade her sister go outside, and bring in a small punk log. By the time the baby was washed the younger woman returned with the log of punk wood. The elder woman now gave the child to her sister, and bade her hurry away with it, and she would follow presently. The younger woman took the child and hurried off with it, and the elder took the piece of punk wood and placed it in the baby's cradle. She then hung the cradle up again to the spring pole, and, giving the swinging string to the old woman, bade her swing the baby if it cried. "It is asleep now, and you had better not disturb it; let it alone till it cries again." After this she leaves the old woman, and hurries off after her sister, whom she presently overtakes. They now travel on until they have left that part of the country far behind them. They then stop and build themselves a house, and remain there. They take great care of the child, and search out and learn the best kind of medicine to give it to make it grow quickly to manhood. When they discovered the right kind, they wash the child with it, and straightway he becomes a man and takes the two women for his wives. He spends his time in hunting and wandering about the country.

In the meantime the old woman who had been robbed of her grandchild began to wonder as the hours went by why the baby did not wake up or cry.

Presently growing anxious, she got up and felt for the cradle, and discovered that where the baby ought to be was only a rotten log. She shouts out to her husband, who is down the creek some distance fishing, calling him by name and telling him that their grandchild had been changed to a log. The old man, whose name was SkwāskwāsEt, heard her shouts, but the noise of the water prevented him from understanding what she said. So he pulled out a hair from his leg, and after chewing it for a moment spat it into the waterfall. This caused the water to stop falling, and to become quite silent and still. He now listens to his wife's shouting, and understands what she says. He hurries home, and the old woman tells him what has happened. He scolds her for her carelessness, telling her she should have taken better care of their grandson. She replies by bidding him take her on his back, and hurry with her after the thieves. He puts her on his back, and they set off in pursuit, and she, by her magic power and the repeated utterance of a mystic phrase, shortens the way, so that in a little while they draw near to the two women. They hear the crying of the baby a little way in advance. The old man now throws his wife off his shoulders, and rushes forward to catch the women; but no sooner is his old wife left behind, than the sound of the child's crying recedes farther and farther away, and soon he hears it no more, and knows not which direction to take. In anger he returns to his wife, and takes her up and jams her nose into a log, saying as he does so, "There! you shall become a *Tsúkwa*. By and bye people will eat you, and give you the name *Tsúkwa*." (The Tsúkwa is some kind of trailing plant or herb that grows on logs in the forest.) SkwāskwāsEt now returns home. After he had been home some little time, his daughter, the mother of the stolen child, returns, and is informed by him that her child has been stolen by two women. When she learns this, she asks him where the child's cradle was. Being told, she gets it and takes out the napkins. She now makes preparations for washing them, heating the water with hot stones, which she takes from the fire with tongs. When the water is ready she soaks the napkins and presently wrings them out. The drippings from the napkins are thereupon transformed into a child, which cries like a new-born baby. She takes this child and cares for him, and in a short time he becomes a young man. He now goes forth to hunt. One day, as he was out hunting, he saw a strange man, and wondered who he might be. On his return he told his mother, and she replies, "Oh, my son, it may be your elder brother who was stolen by two women. You can easily find out if it be he; your elder brother had a mole on his cheek." The following day the youth, whose name was "Squeezed-from-a-napkin," returned to that part of the country where he had seen the stranger. Presently he heard a tapping sound like that made by a woodpecker. He goes in the direction of the sound, and in a little while comes upon the stranger. They sit down together, and enter into conversation, and presently Squeezed-from-a-napkin says to the other, "I think you must be my missing brother who was stolen by two women." "It is true," the other answered; "I am he. Now I want you to go home, and come back here again to-morrow, and then I will go home with you." Thereupon they separate, the younger going home to ell his mother that the strange hunter was her lost son, and the elder going back dispose of his wicked wives and the children they had borne him. When queezed-from-a-napkin gets home he tells his mother what has taken place, and that his brother had instructed him to return for him on the morrow. Both mother and son are so excited about the matter that they cannot sleep at all that night, and at the first break of day get up, the son making preparations for his journey, the mother for the home-coming of her first-born.

When Squeezed-from-a-napkin is ready he sets off, and in course of time reaching the spot where his elder brother was to meet him, sits down there to await him.

In the meantime his elder brother had returned to his house. As he lay abed that night he pondered over what steps he should take to punish his wives for their wickedness. At last he determined upon a course, and rises and goes out to gather a quantity of pitch-wood. Having found what he sought, he takes it home, and splits it into small pieces and puts it over the fire to dry. He goes back to his bed again, but is unable to sleep. At daybreak he rises again, and taking his elder wife in his arms, he casts her upon the ground. Immediately she is changed to a grizzly bear. He then takes his younger wife and treats her in the same manner, only she is changed to a black bear. When he has accomplished this, he takes his children, and blowing upon them, transforms them into little birds, which now fly away. He then takes the pitchwood, and, making a fire, burns up his house and all it contains, and then sets out to meet his brother. In due time they meet, and the two go home to their mother, and thereafter live with her.

THE INSTRUCTIONS OF THE MOUNTAIN-GOAT PEOPLE IN NATIVE TEXT.

Etl-zōk·ᵘcauq kō tcē tsḗla átī, tlō-tlḗEk-kauq auwicnḗmutl
When-kill-you any animal do-it-like this, came-you to-us

Etl-nḗtlac kw'c hṓīc qEkqḗtcēm kō tā́kEm EckÉnkan, nEqúktEn-tlketl:
in-order-that we-might-show-you-how everything is-done, instruct-we

"Etl-zṓk·ᵘcauq kō tcē ā́ma kwṓcū cEátsʼqcEc. Kíla kwā́cū k·wólEn kō
"When kill you any animal well that-you look-after it. First-of-all-must-you roast the

k·ā́la, hōz-auq tzákwan kō kā́la qoāz kwanEQē. QoázEc kwac tzákwanac
liver, when-you eat the liver not over-look anyone. It is not should eat

cyák'tca kō kā́la, mṓta kwE tūéwEt. Etl-wec-tzákwanEc kwE tūéwEt kō
a woman any liver, nor-yet a young-hunter. If-he-eat a young-hunter

kā́la HilHilpṓtl wā́-kitl uk·ᵘaliminṓtl kitl. Etl-QoāzEc kwā́cū k·wólEn kwac
liver short-winded he will always-thirsty will-be. If it-is-not that-you cook the

kw'tlōc, nē-tlōs wṓk·ᵘEnauq. Etl-wō·-qátLmin kwā́cū kuólEn rap
head, then throw-it-into-the-water. If desire you to-cook evening

kātíka Ec-k·wólEn-tlkauq. KétcEn-tlkauq kō kuálitc zitzákacū
at-twilight cook-it-you. Lay-down-you some leaves spread-them-you

Etl-kḗtcen-tlkauq aitl tcētémōc utc pā́m'ca; mEtcṓcEm-tlkauq En-ketcám;
then put-it-down-you now facing towards the fire; mark-face-you across;

pōtc-kwām-tlkauq auk· stḗtlō. Tcūk·^{u}kw'c qētltcauq átī wEtcṓcEn-tlkauq
sprinkle-head-you with down. Finished when doing-you this skin-head-you.

Kíla kw'c wÉtcEn-auq tcE zehōctca. Tcūk·^{u} kw'c wEtcṓcEnauq tlāk·ḗEk·
First of all skin-you the right-side. Finished skinning-head-you, short

k'wok'lṓctEn-cū 'nQēEk·^{u}lukcán-tlkauq ; rípEn-tlkauq aitl. Kíla-tlkauq
head-spit-you (take) thrust-it-through-you ; stick-it-in-the-ground-you now. First-of-all-you
the-nose

zehṓctca k·wol'náuq. PlanzEcyip k·wólōctcū́wa pṓtcūn-tlkauq aitl,
right-side roast-you. When-you begin, to-roast-face-you sprinkle-down-you, now,

pōtc-kwā́m-tlkauq wicnū́wa, mEtcṓcEm-tlkauq mṓta wicnū́wa, Eck·útLuks-tlkauq
"down"-head-you all-of-you paint face-you also all-of-you, mark-round-the-nose-you

aitl kw'c mEtcōctcEm-tlkauq aitl mṓta wicnū́wa. 'Ntlāc hṓīcū wEtcṓcEn tc'
now mark-face you now also all-of-you. As-soon-as begin-you to skin the

kw'tlṓca nē-tlōs QEaíc kwakwalūt; 'n tlāc hṓī-cū k·wolṓc tcūk·^{u} tlō
head then not any talking ; after begun-you to roast head it is finished

'ntluk·^{u}pālōcEc ; Etl-p'élik aitl sk·wolṓca tcaúwō-tlkauq aitl,
when bursts-the-eye-ball ; when-turnover now the roasting-head make-noise-you now,

kwalūt-tlkauq aitl, nē-tlōs tcúwac nEā̆sāwáyukstEnc. 'Ntlāc hṓi-cu
talk-you now, then their nEāsāwáyukstEnc. Before begin-you,

ká̆qEtltca kíla kw'c lauwan-auq, EckEtsálik-tlkauq, pṓtcūn-tlkauq.
drying-meat first-of all hang-up-you put-skewer-thro'-the-heart-tongue-and-liver-you, sprinkle-with-down-it-you.

Etl-kwā́ntlkauq aitl tē cōk·^{u}a qEqEtkán-tlkauq tē cok·^{u}a ; c'tcṓwuk
When take you now the upper-layers (of meat) score-it-you-repeatedly the upper-layers ; (then) the leg

zÉhuk, zEhā́ka, ts'káltūQ. Tcūk·^{u} aitl. Qoāz kwā́cū p'amEn ē
right, right arm, ribs. Finished now. Don't you burn-up the

mṓliH-cū́wa. Qoāz kwā́cū Qā́cōcmin kōk'tātl tlṓEc tcḗtcil, kEl-wḗliH
meat-stretchers-your. Don't you grease-face-with fat when it-is-fresh, bad-become

kitl ē kw'tlṓctEn-cū́wa."
will the eyesight-your.

The English equivalent of this will be found in the myth of the origin of the mountain-goat kin given below. I thought it well to give this portion of the myth in the native text on account of its intrinsic importance, and because of its high syntactic value. It is of interest to mark the three different forms of the personal pronoun of the second person employed here, viz : "-tl-kauq," the full primary copulative form,—"auq," the secondary copulative form, and "cū" the possessive form. This latter is not a common usage.

C'lamqEl.

Prayer.

ō-HEá kō̓kpī, ckatza-tlkatl, ā́ma tā́kEma ō̓qwElmīuq kwāc Ec-ātzaq
eavenly Lord, Father-our, good all people should take-care-of

tac tc'kwā́tcitcūwa kíla ā́ma. Ā́ma ē-tā́kEma ō̓qwElmīuq Etl-tcéoqwac
ody the name-thy most good. Good that every person if come-he

E c'nū́wa kíla kō̓kpī. Ā́ma ē-tā́kEma ō̓qwElmīuq En tcā́ tEmḗEQa
ere thou-art highest chief. Good that every person in this world

Hōz-tcélac tūwḗtac tē tcū́wa s'wā skwälū́t Hōz-tcēlac ē-ō̓qwElmíuq wa
shall-do-like everyone-one the thy commands as-do all people who-are

En tE HEā́ tEmḗEQa. Qḗtckit-tō̓mōtl k'w'ckā́tlkatl En tcEā́tEmḗEQa. Ā́ma
in the heavenly world. Give-to us some-food-our in this world. Good that

tlápEn-auq tē tcū́wa tlkátla kEl wa-skōcō̓cEm tcéla tcē tlápEnEm tē kÉla
forget-thou the thou our bad actions like as forget-we the evil

wa-zā́itEn-stō̓mōtl-ac ē cḗEqtla ō̓qwElmīuq. Ā́ma tlrelrel-stō̓mōtl-auq kw'c
done-to-us the other people. Good that make-strong-us-thou that

Qoāzaíc kwac kwā́nEm kō tcḗla kō kEl. Ama cō-cEā́tsuq-stō̓mōtl
not take-we any doing any evil. Good that there-is-care-taken-of-us,

kw'c Qoāzaíc kwac katl kElkEnantcūt. Ā́ma tcélac.
in-order-not that we defile-ourselves. Good that it be so.

MYTH OF THE ORIGIN OF THE MOUNTAIN-GOAT-KIN.

Once, a long time ago, a young man, who was a mountain-goat hunter, went forth by himself to hunt. Now both he and the other members of his tribe had been careless and inconsiderate in their manner of dressing their game and disposing of the blood and offal. This had displeased and grieved the chief of the mountain-goats, and he determined to have the young hunter brought to his camp and instructed in the proper way of killing and dressing his game.

With this end in view, he instructed twō of his young women to assume their goat forms and place themselves in the way of the hunter and draw him to the camp. Accordingly, when the youth was well into the mountains, they show themselves to him under the guise of goats, and lead him in the direction of their camp. After following them from cliff to cliff, he presently loses sight of them. He mounts the spur upon which he had last seen them, but instead of finding two goats there he sees two young women. Not perceiving that they were the goats he had been following changed to human form, he accosts them, asking if they had seen a pair of goats about there a few moments since. "I see," said he, "their tracks to this point, but can find no trace of them beyond." They smile upon him, and say, "They are our own marks; we made them." Thereupon he falls into a trance, and the young women take him up and convey him to their camp, which is close by. This camp lay beneath the water of a lake, which formed the roof of their dwelling. When they had descended with him, the young man recovers fron trance, and looks about him. He is surprised to see that he is in a fine building, with a crystal-like roof over it. The inmates he perceives are hand pleasant-looking people. He is soon made to feel at his ease, and the two women who had brought him there are bestowed upon him freely as his wive

He is not aware of the connection between these seeming people an mountain-goats. Night now coming on, all retire to rest. The hunter share bed of his wives, the elder lying on his right side, the younger on his left. At first gleam of dawn two young men of the goat people leave their couch, don the goat-skin coats and leave the camp. They had received their instructions from the chief the night before as to what they were to do. Soon after their departure one of the young man's wives woke him up, and the other begged him to rise, and go out and shoot them some goats. He complies, and takes his bow and arrows and sets forth in quest of the game.

Now the two goat youths had been instructed on this wise by their chief. "When our visitor goes forth to shoot, you must watch him carefully, and see how he does it." When, therefore, they saw the young hunter approaching them, they waited and watched him.

As soon as he perceived the goats, he drew his bow and shot them. But as he wore his blanket, his arms and his bow were partly hidden beneath it, so that the two goats could not see distinctly how he manipulated his arrows. Said one to the other, "He put the arrow in his teeth." "No," replied the other, "you are mistaken; he held it in his hand." When he had shot the two goats he returned to the camp and bade his wives tell some of the men to go and fetch in the game. Four of the men set off and bring in the two dead goats and skin and clean them. The young hunter observed how they did it, and perceived the care and decorum they used in the operation. First they laid down many leaves with which to soak up the blood; when the cleaning was over these leaves were all carefully gathered up and carried with the other offal of the game, and cast into the river. Next morning, early, the meat is cooked, and after the whole camp had partaken of it, the bones were all carefully gathered up and likewise thrown into the river. Everybody now goes into the water to bathe except the old men and widows, who stand on the bank and sing and dance and throw "medicine" into the water. Presently they return to camp, and shortly after the hunter perceives two of the young men of the tribe come back alone, as if they had stayed longer in the water than the rest of the people.

He had missed these two youths the night before, and also that morning, and he wondered where they had been. The following morning he is again awakened by his wives and begged to go out and kill more game. He complies. Close by the camp he perceived two yearling goats. These he brings down with his arrows, firing only one at each.

Now, as the two goat youths whom he had first shot could not agree as to the method of his shooting, the chief had instructed several of his people to keep watch close by when the young man next went forth to shoot. These hid in the ishes, and tried to observe how he caused the arrow's flight, but the folds of his nket again hid his actions, and they also could not agree as to the manner of his oting. On his return four men are sent out to bring in the game. The same se is observed as before in cleaning and cutting up the goats. The blood is ed up by the leaves, and this, with the rest of the offal, is cast into the lake. meat is cooked and eaten as before, and the bones all gathered up and emoniously thrown into the water when they go to bathe. As before the old en and widows dance and sing on the bank and make "medicine." Again the oung hunter misses two of the goat people, who presently come in a little while after the others. He wonders where they have been. Next morning one of the older men goes and stands just outside the smoke hole on the roof of the dwelling. The wives of the hunter wake him up and point out to him an old buck on this roof. He draws his blanket around him, seizes his bow and arrows, manipulates them under cover of his blanket, and shoots the old buck. His wives, who had this time been instructed to observe how he shot his arrows, closely watched his action, but failed, as did the others, to learn how the arrow was sped. Said one, "I saw him bite the arrow with his teeth." "No, he did not bite it," replied another; "he held it in his hand all the time." All the other inmates of the house were watching and whispering to one another. The arrow struck and killed the buck, which fell down through the smoke-hole. The carcase is treated as before. Whilst they were eating its flesh, the young hunter noticed that one of the elders was missing. He closely watches the others as they gather up the bones and take them to the lake, and notes that one of their number is still missing. He is also absent when they return to the camp, but shortly after comes in with his face and head painted. The young man wonders where he has been, and begins to suspect that there must be some connection between the goats he kills and the individuals who go and come so mysteriously. He determines to keep a close watch and learn what this connection is. The next morning, when his wives wake him, he is not greatly surprised when they tell him that there is a goat in the house. He knows, too, that the people wish to find out how he shoots, so before he takes his bow and arrows, he throws his blanket round him, and speeds the arrow from beneath its folds. Everyone is keenly watching his actions, but again they fail to learn how the arrow is sent. They dispute among themselves, one declaring that he put it in his mouth, another that he blew it, and others that he cast it with his fingers. They now get arrows and try to shoot with them, but all fail in the attempt, and hence, say the Indians, goat people and other animal people never shoot, as they do not know how to use the bow and arrow.

The following morning the hunter's attention is directed by his wives to a pair of goats standing on a butte of the mountain some way off. He goes after and shoots and kills them, and this time he skins them himself. He also cuts them up and cooks them after they are brought home. In doing so he surreptitiously abstracts a small bone from the base of the tongue of one of the goats, and a piece of the cartilage from the nose of the other. These he secretes in his back hair.

After the meal the bones are all collected and taken down to the water as before When the people return from their bathing and singing, the young man notices th two of them are still missing. He now goes and lies down on his bed, holding bone and cartilage in his hand. The two missing goat people presently return, it is seen that something is the matter with them. In a little while his w come to him and say: " Your brothers are sick; one cannot speak, and the nose the other is bleeding; you have kept back some of the bones; please give them us." He at first denies the charge. But they reply that they know he has then and beg him to give them up. He now admits that he has them, saying: " I kept them to find out if you are really people like myself. I know now that you are 'mystery' people. He now gives up the bone and cartilage, the former to his elder wife, the latter to the younger. They take them to the lake and cast them in. The two young goat people to whom they belong now dive into the water, and presently return well and healed. The youth had observed all, and now knew that the people he was living with were the " goat " people. He returns to the house and throws himself on his bed, and ponders upon what he had learnt.

Shortly after this he desires to lie with his elder wife. But she repulses him, and says, " Not so, this is not the time, wait till the next moon."

He then sought his younger wife, but she made the same response. A few days later, the chief instructed two of the " kids " to go down to the river's edge.

Said he to them, " Go and see if your uncle is chasing his wives." He referred to the " dog " salmon, whose spawning season was just then coming on. The two young messengers go to a point or spur of the mountain overlooking the river, and make their observations, but see no sign yet of the salmon. They return and report accordingly.

The goat people therefore still keep camp.

After a few days more have gone by, other messengers are sent, and this time they return with the report that the salmon are " lying down."[1] By this time the moon was full, and the rutting season of the goats come on.

The father-in-law of the young hunter now takes medicine, and causes the rain to fall, and washes his son-in-law, and transforms him into a goat.

Next morning all the females scatter over the mountain, in their goat forms, and the males play and butt each other, after the manner of goats in the rutting season. The wives of the young man had instructed their husband thus: " You can chase and pair with any of the women now, and when the rutting season is over and we return, we shall be your wives again." The young hunter donned his goat-skin, and, with the other male goats, set out to overtake the females. He outstrips all his fellows and " serves " the whole flock before they come up. The old bucks always stay at the camp. They lie down the whole time, never eating and never getting up, except to evacuate, for the whole of the rutting period, which lasts from one full moon to another. A goat is considered an "old fellow" after his fourth year.

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[1] This means that the salmon have spawned, and are dying and lying on the sand bars and banks. After spawning, a salmon frequently dies. The streams are full of dead salmon after spawning time.

When the rutting season is over, a great rain is made, and all bathe and cleanse themselves, turn their goat skins about, and thus assume their human form again. They now remain quiet at the camp, the males being weary and exhausted from the rutting and the females making preparations for their forthcoming "kids." When spring arrives, the women give birth to their children. The wives of the hunter bear him each a son.

He continues to live with the goat people all that summer, having lost all recollection of his former life and relations. But when the summer is over and his children have begun to notice things, they cry incessantly for their paternal grandparents,[1] and he now feels a strong desire to return to his old home. He grows moody, and lies for hours together on his bed without speaking. His wives notice his behaviour, and know that he is longing to return to his parents. They therefore speak to him on this wise. "Cheer up, husband; we know you wish to go back to your own village and people. We will not keep you: you can take your two sons with you, but we must stay behind; we cannot accompany you, we are not the same as you; the boys are of your blood, and so can go with you, but we cannot." He is sorry to part from his wives, but his longing to return to his old home is too strong to be overcome, and he prepares to set out with his two boys.

When he is ready to start they bid him remember what he has seen and learnt among them, and to be careful in his treatment of the carcases of his game particularly those of the mountain-goat.

Said they: "Tell your people to paint their faces before they begin to skin and cut up a goat, and to place the sacred down upon the tongue, and lungs and heart, and hang the whole up to dry in the house over the fire, for that is good "medicine" for us. They must also carefully gather up the bones and other offal, and put them in the water, as you have seen us do. In cooking the meat, first roast the liver on a spit, after putting down upon it: that is good "medicine" for us. When the liver is cooked take some fresh cypress branches, and place the liver upon them and cut it up into small bits and give a portion to each person. If you should make use of and cook the head, mark the face first with red paint, sprinkle down upon it, and place it before the fire nose foremost. Let it remain there a little while, and then skin it. The man who does this must paint his face and put down upon his head, and all who are near and watching him must be silent and make no noise of any kind. When the head is skinned, then place it before the fire again, carefully turning the right side first towards the flame. All the time the head is thus roasting, the people must keep silent: not even a cough or sneeze must be heard, or the "spirit" of the goat will be frightened away, and you would have no more luck in hunting goats. Let the head remain before the fire until the right eye bursts under the heat with a splutter, then turn the left side to the fire. Now the

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[1] In Indian stories this is a common way of reminding a man who has for some reason left his own parents and home and forgotten all about them, of their existence and his former life.

"spirit" cannot see the people misbehave, and it does not matter if they talk and make a noise. If the "spirit" should ask the "cook" what that noise is, he can answer, "That is your people's noise, not mine." When the head is cooked give a little of it to each of the elders; the women and young men must not touch it. This must always be done at sunset on the day of killing."

The young man promised to remember and observe for the future all the instructions they had given him.

He now sets out for his old home, taking his two sons and the pack his wives had prepared, with him. When he gets near home he conceals himself and his sons on the edge of the village. Presently his younger brother came by. He was playing with a bow and arrow. He shot the arrow towards the spot where his elder brother lay hidden. The latter seized and held the arrow, and when the former comes to get it, he is accosted by his brother, and asked what he is looking for. He replies, "My arrow, which I shot in this direction. Have you seen it?" The elder brother now gives the younger the arrow, and tells him that he is his elder brother who was lost, and bids him go tell his parents that he has returned, and desire them to make the house clean and strew fresh branches on the floor; for he could not enter till this was done. The boy runs home, and informs his parents that his elder brother was on the outskirts of the village, and desired them to clean and make ready the house for his reception. His mother, who believes that her elder son must be dead, gets angry with him, thinking he is needlessly reminding her of her loss. She weeps and says, "Why do you tell me this lie?" and whips him and sends him out of the house. The lad declares it is no lie; but the mother refuses to believe him. He then returns to his elder brother and tells him what has taken place. The elder brother then unties one of his packs, and takes therefrom a choice piece of kidney-fat, and bids his younger brother take that to his mother, and tell her again to prepare the house for him, that he was really come home, and had brought two young sons with him. When the mother sees the fat, she knows her younger child's story must be true. She informs her husband, and then goes out to see her lost son. He tells her of his adventures, and all that had befallen him, and that his memory of her and his home had left him entirely for a whole year. When she has heard his story, she returns to the house and sends out her husband to bring in the packs. Said she "Take your packing-strap, and go and bring in our son's packs; he is really there." She then makes the house clean and tidy, and purifies it of all bad smells. This was necessary because her son had been living among the goat people, and, like them, would be harmed by bad smells. The goats had no fires in their houses and no smoke, and as they did not eat fish there was no bad smell of fish with them as with the Indian. When everything was ready, the young man and his two boys were brought home, and all the people of the village came to see him and them. He had brought with him four small packs. When everybody had come in and was seated, he took these four packs, which contained much more than they appeared to hold, being magic packs, and shook some of the contents of one of them before each of the visitors. One contained dried goat-meat, one kidney-fat, and the other two goat-hair for making blankets. On the day of his arrival he distributed the meat only, and bade the people come back again the next day. The second day he opened the pack of fat, and distributed this in like manner; and on the succeeding day, one of the packs of hair. The fourth pack he gave to his mother. He had taken advantage of the presence of the people on these days, and had instructed them in the things he had learned, and how they ought to handle and prepare their game, especially the carcases of the mountain-goats.

When this man's sons grew up, they became skilful goat-hunters, and never failed to bring home all the meat they needed, the goats readily putting themselves in their way, that they might kill them and not lack food.

Paul gave me this myth in explanation of the origin of the mountain-goat kin of his father, who are supposed to be descendants of the goat youths.

I have given that part of it relating to the treatment of the dead game in the native text above, on account of its importance and syntactic value.

I might add here, in this relation, that the liver of any animal was forbidden at all times to young people of both sexes—to young men, because it was supposed to make a hunter thirsty and broken-winded; and to young women, because it made them short-winded when climbing the mountain slopes in search of berries and roots. Even the elderly people ate sparingly of it because of its thirst-producing tendencies.

MYTH OF THE MAN WHO RESTORED THE DEAD.

A certain young man lived with his parents. Being of the age to marry, he took a wife, of whom he became very fond. They had not been married long when the young wife fell sick, and shortly after died. The corpse was wrapped in the best blanket, and put away after the manner of his people. The youth is heart-broken, and sorrows much. His uncle is sorry for him, and says: "Why not do as the old people advise and go for your kwāzăntcūt (training for "mystery power"). He hearkens to his uncle's advice, and replies, "Very good, I will go." He ceased his lamentations, and went down to the stream, and washed the tears from his countenance. All his friends and kinsfolk are gathered at the house and make loud lamentations for the dead, but he joins with them no more. That night, when all the village is asleep, he takes his father's fire-drill and quiver of arrows, and starts off to undergo his kwāzăntcūt. He goes to the head of a distant creek, and then constructs for himself a 'nk·Élzatᴇn or sweat-house. Here he enters upon a long course of bodily training. He remains at the creek for a whole year, at the end of which he has a vision, and a *snam* appears to him, and offers him the mystery power of curing coughs. This not being what he seeks, he betakes himself to another spot, and undergoes a second year's training. At the end of this period, he has a second vision, and the *snam* this time offers him the power of curing all pulmonary ailments. Again he is dissatisfied with his gift, and departs to another training ground. Here also he spent a year in exercises; at the close of which he had a third vision. This time his *snam* offers him the power to cure miscarriages. "These," said he, "are not the powers I seek; I want to be able to restore my dead wife to life." He seeks out a new spot and continues his kwāzántcūt for another year. When the fourth year is completed he falls into a trance, and while in that condition learns from his *snam* how he may restore the dead to life. He is told to step over the dead body four times, and then it will rise up alive: nor need the body be whole, a small bone of it would do as well. When he recovered from his trance, he began to test his power. He sought for the bones of dead animals. He came upon one of the bones of a bird. He steps over this four times, as his *snam* had instructed him, and immediately the bone becomes a bird, and rises and flies away. He is now glad, and rejoices over his power, and seeks to test it still further. Presently he comes upon the bone of a deer. He treats this as he had the bone of the bird, and straightway a deer springs up alive and runs off. He is now anxious to test his power upon the remains of human bodies: he is not yet satisfied that he has the power to restore his wife to life. But he can find no human bones, so he determines to return one night when all the village is asleep to try his power upon the corpse of his wife. In the meantime he continues to practice and strengthen his power upon the bones of birds and animals. He learns to vary his practice. Sometimes he brushes the bones with the tips of fir-trees; sometimes he sucks up water into his mouth, and blows it out upon the bones through his hands; and at others he blows his breath upon the object. When he thought he had grown "strong" enough, he sets his face homewards, now to try his power upon his wife's corpse. He arrives at night, and opens the grave and levels the soil. He then steps over the corpse; at the first step his wife revived and sat up. He now brushes her on back and front and on both sides with fir-tops, then sprinkles "medicine water" upon her, and bids her arise. She stands up. He now invites her to come with him to the stream. They enter the water together, and he washes her all over with fir-branches. This is to take away the odour of the dead from her. He now gives her a fresh, clean blanket, and then slowly and gently takes her home to the house of her parents, as she is still weak. They enter without disturbing the family, and retire to bed. The next morning when his mother-in-law rises, she perceives the couple at once. She wonders who they are, and quietly wakes her husband and whispers to him to look at the strangers in their daughter's bed. He looks and wonders also who they are, but does not go near them. Presently he rises, and noisily makes up the fire. The disturbance arouses the young man, who now uncovers his face and looks about him. His father-in-law recognises him, and says to his wife, "He is your son-in-law." The young couple now get up. The girl's mother is much agitated, and trembles greatly. She feels them to see if they are really alive, and not ghosts. When she is satisfied that it is really they, she is much rejoiced, and makes known the glad tidings to all the kinsfolk and friends of the family. These now flock in to see the marvel, and all are astonished and filled with wonder at the occurrence.

’Nkwinkwinkéin.

The Gambler.

There was once a man who spent all his time in gambling. At times he won, but more often he lost One day he had worse luck than usual, and after he had lost all his property, he staked his wife and children. He loses them also, and is left without a single belonging. He feels sad and miserable. Some old people tell him he should go and visit the gambling man, who lives afar off in the mountains. This man was a Qa Qa, or mystery man.

The gambler determined to visit this person, and learn from him the mystery of gambling. He goes off into the forest, and begins a course of mystery training. He built himself a sweat-house, and took many sweat baths. At the end of a year he set out to find the Qa Qa man. In time he came to a stream, on the other side of which he saw smoke rising. The stream was deep and swift, and he called out for someone to come and put him over; but no one stirred. He calls again and yet again, but still no one answers his call, or puts in an appearance. He becomes angry; he is tired; he yawns. No sooner had he done so than some one immediately calls out, “Hello! there; what do you want?” “I wish to cross over; bring a canoe and take me across,” he replied. Presently a man appears, and paddles across in a canoe to him. He gets in and the man paddles back. When they reach the middle of the stream he stops and asks the gambler where he wants to go. “Do you wish to cross to ’NÉZEnēQa?” “Yes,” replied the gambler. “No, don’t go there,” said the ferryman; “go to ’NkÉlnēQa.” “No, I don’t want to go to ’NkÉlnēQa, take me to ’NÉZEnēQa.” The ferryman tries to persuade his passenger to go to the house of ’NkÉlnēQa, but the other refuses. Four times the ferryman tries to induce him to go to ’NkÉlnēQa, but the other is firm, and refuses to be taken in that direction. He is landed at a point where two trails diverge, one to the right and one to the left; the one leads to the dwelling of ’NÉZEnēQa, the other to that of ’NkÉlnēQa. Now ’NÉZEnēQa was the mystery being of all that was lovely and beautiful in nature, and ’NkÉlnēQa was the mystery being of all that is bad and ugly. The former presided over good and fair weather, the latter over dark and foul weather. The ferryman now asks the gambler which trail he will take, ’NÉZEnēQa’s or ’NkÉlnēQa’s? The latter replies, “’NÉZEnēQa’s.” “No, don’t take that; take the other,” urged the ferryman. But the gambler was not to be moved. Four times did the ferryman ask him which road he wished to take, and four times he tried to advise him to take that which led to the home of the bad spirit.

When the trial was over the ferryman led the way along ’NÉZEnēQa trail. Presently they come to a Skumel, and the ferryman puts his head down the smoke-hole and cries out, “Here is a man come to see you.” “All right,” answers a voice from below, “let him remain on the roof; I’ll come up in a moment. Meantime you go and get some kālitc (young fir shoots).” ’NÉZEnēQa now climbs up the pole and joins the gambler on the roof. When the slave returns with the fir-tops, 'NÉzEnēQa brushes the gambler all over with them. When he has finished he says to his visitor, "Look at your badness which I have brushed out of you." The gambler looks on the ground and sees what looks like the scales of a fish. 'NÉzEnēQa now bids the slave take up the "sheddings" and cast them into the river, and invites his visitor to enter the Skumel. They both descend. They sit down, the gambler being given the seat of honour on the right-hand side of his host. 'NÉzEnēQa now sprinkles "medicine" upon his guest. Presently it is evening, and night comes on, and a large party of ghosts come to the Skumel to gamble (slikEmâiwc), bringing with them much property. This property consists of the things that were put with their bodies when they were buried. 'NÉzEnēQa taking some of his "medicine," sprinkles it on the ghosts, and they all suddenly disappear, leaving their property behind them. This 'NÉzEnēQa gives to his visitor. Four days and nights 'Nkwinkwinkéin stays with 'NÉzEnēQa, and each night the ghosts come to gamble, and are frightened away by his host's magic, and he gets all their property. After the fourth night, 'NÉzEnēQa says to him, "Now you have enough property, you shall go home again." Before he leaves he packs up all the ghost's property into four bundles, and by his magic so decreases the size and weight of these that the gambler is easily able to carry all four. He also at parting presents him with his magic flying gambling bones. 'Nkwinkwinkéin in course of time reaches his old home. He is now a wealthy man, and determines to be revenged upon his old gambling friend who had stripped him of his former possessions.

This man's name was Humanóntc. It is soon known that 'Nkwinkwinkéin has returned with much property. Humanóntc chuckles to himself when he hears of it, and already considers it as good as his own. He makes an early call upon his old friend, and proposes a little gamble. 'Nkwinkwinkéin assents, with a show of indifference. The people soon gather round to watch the game. At first 'Nkwinkwinkéin allows his opponent to win, and as his property passes piece by piece over to the side of Humanóntc, his friends look sorry, and feel sad at his ill-luck. But he smiles all the time, and tells them it is all right, that he is not beaten yet. When he has lost all but the last blanket, he takes the magic bones of 'NÉzEnéQa, and they fly so quickly from one of his hands to the other that Humanóntc is unable to tell which hand contains the marked one, and so loses his winnings piece by piece and all the rest of his belongings till he has not even a blanket to call his own.

A few days later it enters his mind to go away and seek a Qa Qa man, as 'Nkwinkwinkéin had done. He therefore sets out. In course of time he comes to the river which he desires to cross. He sees smoke rising on the other side, and shouts out to attract the attention of those who might be camping or living there. But he meets with no response to his calls. He shouts again and again, till he is angry and tired. Presently he opens his mouth and yawns. No sooner had he done so than a man appeared upon the other side, and asks him what he wants. Humanóntc asks to be taken across. The man gets into his canoe and paddles over to him. From this point the story is a repetition of the experience of 'Nkwinkwinkēin, with the difference that Humanōntc chooses to go to 'NkElnēQa's house, where he meets with his death, which brings the tale to a close.

MYTH OF THE DESERTED BOY.

A long time ago many people lived at Seaton Lake. The chief of the village had a son about ten years old. One day this boy, who was of a gluttonous disposition, went to a certain house and told the inmates that his father had sent him to borrow some cured salmon, some s'tcắkwum (dried berries), and some skắmitc (long carrot-like roots). The woman says, "All right," and gives him the food. Now the boy had lied to the woman; he had come at the promptings of his gluttony, not at the desire of his father. He takes the food into the bush by himself and eats the whole.

The next day he tries the same trick, going to another house, and asks this time for some oil, some nEmátlkwa (salmon-butter), and some stūpál (salmon-flour). His requests are complied with, and he takes the food as before into the bush and devours it all himself. Again, the third day, he does the same, asking this time for some cōk· (dried meat). Finding this an easy way to fill his stomach, he goes again the fourth day, and asks for some cqus (fat) for his parents. By this time the people begin to talk about the chief begging food each day, and the boy's aunt, hearing the gossip, suspects what has happened, and comes to the boy's parents and tells them, asking if their son is borrowing food with their knowledge and consent. Said she, "Your boy has been round to all the houses, borrowing food, and saying you had sent him." "No," said the chief, "I did not send him, I do not think it can be true." "Yes, it is," replied the boy's aunt; "you watch him, and you'll soon find out it's true." This the chief determined to do, and accordingly sends someone to watch the boy's movements through the day. The boy, not suspecting that his trick has been found out, goes again to one of the houses, and asks for more food. The person set to watch him follows him to the bush, and then leaves him eating the food whilst he runs back and tells the boy's parents. They come out and observe him themselves, and when the chief is convinced of the truth of the story, he goes round to each house and asks, "Has my son come to you borrowing food for me?" All reply in the affirmative. The chief is much annoyed, and very angry with his son, and determines to punish him most severely. He tells some of the older boys to take him across the mountain, and when they get him there to lose him, and leave him to shift for himself.

The boys start off on their trip, with the ostensible object of getting a supply of good arrow-wood. When they get on the other side of the mountain range, they intentionally separate themselves from the chief's son and hurry back and leave him there. The elders had been waiting for them in their canoes at the edge of the lake. As soon as the boys arrive the canoes are turned lakewards and everybody leaves.

The deserted boy is thus left on the far side of the lake, with no means of crossing it. Now, the land juts far out into the lake at one point, forming a promontory. When the canoes round this, one old woman lags behind, and as soon as she is hidden by the land from the others, she paddles back to the old camp. She then gathers some of the discarded cores of the roots they had been eating, and put them in the ashes of the camp fire to set them smouldering. She then put them in her bosom to await the coming of her grandson. In the meantime the deserted boy had missed his companions and was making his way back to camp. When he reached the crown of the mountain, he saw lying before him the waters of the lake, and in the distance the receding canoes of his people. He realises then that he has been deserted. He cries, and rages, and kicks the mountain so hard that a portion of it slid down into the lake, the course of which may be seen to this day. Presently, when his grief and rage have subsided, he returns to the camp. When he gets there, he perceives a small basket on the ground. He kicks it out of his way, saying, "Why did you not go with your owner?" The old woman, who was lying under the cover which sheltered her like the roof of a Skumel, now cried out, "My grandson, I am here." She now takes from her bosom the smouldering cores, and says, "See here, my grandson, we can get fire with these; don't be downhearted, I will stay with you." She is glad, and rejoices that he has returned; he also is glad to find her, and stops his crying, and makes a fire and constructs a small dwelling for them. The old woman now bids him go look in the tcépōn (cellars) of the camp to see if he could find any salmon bones or scraps. Now, some of the people when they paddled off had felt sorry for the deserted boy, and had left some scraps of food for him in their tcḗpōn. These he now gathers up and takes back to his grandmother. When she receives them she says to him, "Don't forget where you found this food; some day you can repay those who left it for you."

They continue to live there at the camp. He makes traps and catches a number of small animals. Amongst these was the magpie. They eat the flesh of them, and the old woman makes blankets of the skins. The boy's blanket (Erc̄ēétsa) was composed wholly of magpie skins. The summer is now advancing, and the weather is warm and fine. One day the boy put on his magpie-skin blanket, and went outside to sit in the sun. Presently the Sun-man came down to the boy, and said to him, "I wish to have your magpie blanket. Let us change blankets. You take mine, and let me have yours. My cnâz (blanket) is a magic blanket. If you put a corner of it into the lake the trout will immediately swarm about the spot, and you can take them readily. And if you desire lots of fish you have only to dip it a little deeper and you will get all you want. If you wish to keep them you must preserve them by drying them. Thrust a switch through their gills and hang them thus up to dry in the sun or in the smoke of your fires."

They exchange blankets, and the Sun goes back again. The boy now desires to test his magic garment, and so goes down to the edge of the lake and dips one corner of it into the water. Immediately the spot is teeming with trout. He puts in his dip-net and takes a netful at the first dip. He leaves them on the bank and runs back to tell his grandmother of his good fortune. She comes down to the water's edge to see his catch. She is greatly delighted, and bids him catch more. He dips the corner of his magic shining blanket into the lake four times, and they take more fish than they know what to do with. They dry large quantities and store them away. When they have filled their own tcĕpōn the old woman tells him to take the rest and put them in those tcĕpōn in which he had found the salmon scraps and bones, but to put none in the other cellars. The boy does so.

Now one day one of the men of his father's village, whose name was Crow, flew over to the lad's camp. He sat on the branch of a tree and began to croak. When the boy saw him he said, "What are you laughing about? Come in and get some food; you look hungry." Crow comes and takes the fish offered him. Says the boy as he gives him the fish, "Don't let any of the other people see them, only your children." Crow takes home the fish to his family. When the young Crows saw the string of trout their father brought with him, they began to cry out and make a great noise to get some. This attracts the attention of the village, and some of the people come to see what all the noise is about. They saw Crow feeding his children with a string of dried trout. They wonder where he has procured it, as food has been very short with them all for some time. Crow makes no communication to them, so they watch his movements. Four successive days did Crow fly across to the deserted boy's camp and bring back with him a string of dried trout on each occasion. One man begins to suspect where Crow gets his supplies.

He says to the others, "I have watched Crow's movements for four days. Each day he has flown across the lake in the direction of our old camp, where we left the chief's son. Let us send some one over to-morrow to watch what takes place there." Accordingly on the morrow two men paddle across the lake to the camp of the deserted boy. When they were about a mile off shore they perceive a bright and shining object on the edge of the lake. They wonder what it can be, and go on very quietly. When they get near they see that the glittering sheen which had caught their attention comes from the blanket of a youth who is sitting down like a grown-up person. They land, and presently recognise the boy, and say to him, "We have come across to see you; your father has been feeling very unhappy about you. How are you getting on?" "Oh," replied he, "I am all right; we have plenty to eat over here. Come in and have some food; you look hungry." They enter the house, and the old woman prepares them a bountiful meal of trout. When they have eaten, they depart again to report to the others what they have seen, taking with them a present of a good supply of dried trout which the boy made them.

When they get back to the village they inform the chief that his son has become a Qa Qa or mystery-man, and is living in plenty across the lake. "Let us go over there ourselves," said the chief. They go across. When they are getting near the camp the youth takes a stone and throws it into the water, saying as he did so, "Go back; you cannot land yet."

No sooner had he done and said this than the current carried the canoes a long way back. Again and again as his father and his people approached he caused their canoes to be carried back, and it was not till the sun was about to set that he permitted them to land. This he did to show the people his power.

When the people had landed and gone to their houses, those who had felt sorry at the desertion of the boy, and had left him some scraps of food in their tcĕ́pōn, now reaped their reward. They found their cellars stocked with quantities of dried fish, but the cellars of the boy's father and uncles, and of those who had not been friendly disposed towards him, contained nothing, and they had to go to bed hungry that night.

Next morning the youth rises early and goes down to the lake and dips in his magic blanket. The lake's edge is straightway filled with fish. He now calls all the people and bids them help themselves. He now becomes a great man among them.

MYTH OF THE DEAD WOMAN WHO BECAME A BEAR.

There was once a young man who was a lucky bear hunter. He had a wife. She fell sick and died. He wrapped the corpse in a fine bear-skin blanket and laid it away in the grave-box. A day or two after some youths went down to the river to spear salmon. They passed near the grave-yard, and seeing the tracks of a bear, ran back to the village and told the bear hunter. He called his dogs, and went to follow up the tracks. They led him here and there, and finally brought him to the grave-box of his late wife. He looked in and saw the corpse apparently lying as he had left it. Beyond this point he could find no tracks of the bear. Next day fresh tracks were seen. He followed these up to their starting point, which was the grave-box of his late wife. He looked in the box and beheld it was empty. He knew now that the tracks he had been following were those of his deceased wife, who had come to life again in the form of a bear.

MYTH OF THE MARRIAGE OF NORTH WIND AND SOUTH WIND.

In the far-off days, Cŭ́tick, the North Wind, came south and married Skäpitc the South Wind, and took her back to his northern home with him. Her lot is not a happy one. She is unaccustomed to North Wind's mode of life. He lives in an ice-house without any fire. Skắpitc sits and shivers all day long with the cold, and is very miserable and unhappy. She longs for her brothers, of whom she had three. The eldest was named QōQalánūq. He was the Wind that bears the sleet. The second was called Kupkuptcilánūq. He was the Spring Wind. The third was called Hauhaulánūq. He was the Wind of Mid-summer. In her longing for her brothers she calls out to them one after the other, addressing them by name, thus:

"O, QōQalánūq nĕtl-ᴇɴ zōk·. O, QōQalánūq, I am dying." Four times she wails forth this plaint.

QōQalánūq hears the wailing of his sister, and says to his brothers, "Listen to what our sister the South Wind is saying." They listen and hear. At first the eldest will not believe that his sister is in trouble and unhappy. While they are discussing the matter and considering what to do, they hear her wailing again. This time she calls to her second brother. Four times they hear her cry:

"O Kupkuptcilánūq nētl-En zōk·, O Kupkuptcilánūq, I am dying."

Before they have decided again what to do they hear her cries again. This time they are addressed to her youngest brother.

"O Hauhaulánūq nētl-En zōk·, O Hauhaulánūq, I am dying." Again it is repeated four times. Said one of them now to the others, "Let us go and see what is the matter with our sister. QōQalánūq must go first, because he is the eldest, and we will follow." Thus it was agreed, and QōQalánūq thereupon sets forth to visit the Northland, the home of his sister's husband. When he arrives he finds her very ill and wretched. She is slowly perishing from the cold. He awaits his brothers. Next day Kupkuptcilánūq arrives and the day following Hauhaulánūq. After the arrival of the latter, Cŭ́tick, the husband, is very uneasy and much alarmed for his safety. The warmth of the Summer Wind's presence is deadly to him, and he feels faint and sick. Skắpitc, seeing his condition, tries to shelter him from the influence of her youngest brother by standing between them.

The brothers now desire to take their sister away with them, but to this the husband objects. Hauhaulánūq now gets angry, and approaches Cŭ́tick, who is terribly distressed by his wrath. The youngest brother is for killing Cŭ́tick outright, but the eldest dissuades him, saying, "It will not be good to kill the North Wind, for then it will always be hot." So Hauhaulánūq spares him, and they take their sister away with them.

Now, the woman had a baby. It was an ice-child, and she wanted to take it with her. This she did stealthily, unknown to her brothers. She bound the child to the back of one of her thighs, and thus hid it beneath her blanket. But as they journeyed the presence of this ice-child caused a chilly atmosphere to surround them. This was very disagreeable to Hauhaulánūq, her youngest brother, and he sought to learn its cause. Said he to her, "I wonder where this cold wind comes from. Do you know what it is?" But she denied any knowledge of it.

In a little while he complains again, and taking his sister's blanket in his hand, pulls it aside to see if she is carrying anything beneath it. He at once perceives her ice-baby. "Why do you carry that?" he asks. "You cannot take that home"; and with that he takes the child from her and casts it into the river. It floats away and presently melts, and they continue their journey to the Southland. Because the South Wind carried her ice-baby at the back of her thigh, this part of a woman's leg—so believe the Indians—has been cold ever since.

I may add here that I did not seek to collect any myths from the upper StlatlumH, as I had learned from Mr. J. Teit that he had made a collection from this centre for Dr. F. Boas. These have not yet, I believe, been published; but they doubtless will be sooner or later.

VOCABULARY.

Terms of Consanguinity and Affinity.

great-great-great-grandfather } ṓkwiuk·s.
„ „ „ „ *mother*

great-great-grandfather } tsṓpiyuk·s.
„ „ „ *mother*

„ *grandfather* } tsā́muk·s or tsEā́muk·s.
„ „ *mother*

grandfather, tcṓpa; *my grandfather*, n'-tcṓpa.

grandmother, kṓkwa; *my grandmother*, n'-kṓkwa or n'-kwa.

grandson
granddaughter } ḗmatc; *my grandchild*, n'-ḗmatc.
grandchild

grandchildren (coll.) Emḗmatc; *my grandchildren*, n'Emḗmatc.

son
daughter } skṓza; *my son*, tEn skṓza; *my daughter*, tīn skṓza; *my child*, n'skṓza.
child

It will be noticed that the distinction between son and daughter is effected in this dialect by a change of the vowel. This is the only instance that I have detected of a formal gender in the StlatlumH speech, this division being wanting in those demonstrative sex-denoting elements which I have pointed out in the Halkōmḗlem, the Sk·qṓmic, and the Síciatl tongues. And the way of making a distinction between a son and a daughter in the StlatlumH is to modify the common term by coupling with it an abbreviated form of the terms for "man," "woman"; thus:—tē skaíwa n'skṓza, *my "male" child*: tē yā́kutca n'skṓza, *my "female" child.* The demonstrative particle, tē, which marks the *presence* of the object, is changed to nē, when the object under discussion is not present, nē being the particle which, in this dialect, marks the *absence* of the object.

Children, stcumā́lt or ctc'mā́lit; *my children*, nE-stcumā́lt. Speaking collectively of one's children and those of one's own brother or sister, the term is mÉnEmEna, thus:—*my children, and nephews, and nieces*, nÉ mÉnEmEna. This is a reduplicated form of the common term for son, daughter, child, in the HalkōmḗlEm speech. When speaking of other children the terms commonly employed are skūkumḗt (singular) and skwumkṓkōmet (plural).

Mother, skḗqōza, when spoken of; when addressed kḗHya or kḗHūya.

Father, skā́tza, when spoken of; when addressed, kā́tcya.

elder brother } kā́tcih. *elder sister* } kÉqkEq.
elder male cousin *elder female cousin*

younger brother
„ *sister* } cíckwāz.
, *cousin*

Note.—A man speaking of his sisters may use a common term without reference to age; thus he may say, "nE cēā́ktca," *my sister*, in answer to such a question as, "cwät tEṓ?" *who is that?* The enquirer may then ask, *your elder sister?* kEqkEqcūha? and if it is the younger he will reply *No*, "qoāz," "'ntcíckwāz," *my younger sister.*

brother's } *child* { skwEcā́, male.
sister's } { stū́nEq, female.
elder of two brothers, or sisters, or cousins, skílamqa.
younger of two „ „ „ alā́na, a diminutive form of which is alílina.
father-in-law } cā́ka.
mother-in-law }
brother-in-law, tcā́kEt.
step-son } skwozṓtl.
step-daughter }
husband, kwEtā́mitc;
wife, cEmā́m;
wife, addressed by husband, nḗū.
husband, „ „ wife, nēū́.
parents, slalḗltEm.
son-in-law, stcūtátl.
daughter-in-law, cā́pEn.
sister-in-law, cEā́ctEm.
step-father, skutcElṓtl.
step-mother, sḳEḳaṓtl.
my husband, 'n-kwEtā́mitc.
wives, c'mā́amám.

Brothers, sisters, and cousins address each other thus:—

cṓkwEl { *younger brother* / „ *sister* / „ *cousin* } addressed by elder brother, etc.

ā́pa { *elder brother* / „ *male cousin* } addressed by younger brother, etc.

kíka { *elder sister* / „ *female cousin* } addressed by younger brother, etc.

It is interesting to compare these with the corresponding Halkōmélem terms which are all radically different. Thus:—

Eyā́k, *elder brother or cousin*, addressed by younger brother, sister, or cousin.
Eyā́, *elder sister or cousin*, addressed by younger brother, etc.
Eyís, *younger sister or cousin* } addressed by elder brother, etc.
Eyísuk, *younger brother or cousin* }

In this dialect each has a different form, but all are derived from a common root.

Parts of the Body.

head, k·wómkEn.
face, skw'tlōc.
crown of head, natclEkēn.
parting in hair, wākElakēntEn.
back of head, tcEksapúkEn.
side of whole head, alāna.
jaw, kwEzōzōqtcEk.
hair (of head), māken.
beard, zhwōpitc.
hair (on the body), kwātc.
tooth, raítcmin.
eye tooth, kEqānic.
molar teeth, mōtkānic.
tongue, tōqsátl.
palate, qaumin.
gums, tcēakānac.
nose, spózuks.
ear, k·léna *or* t·léna.
eye, 'nk·lōstEn *or* 'nt·lōstEn.
eye-brow, nūwEpkēlōma.
eye-lash, tl'pālic.
cheek, kōzāpEl.
mouth, tcūtcin.
upper-lip, cÉatc.
lower-lip, skaúinEtc.
throat, HakazōtlkWilt.
neck, nalālēmet.
chest, täkwatc.
breasts, skām.
back, sqētskin.
stomach, ōalēm.
arm, sqwōāqEn.
hand, skūākict.
elbow, kāiqtEn.
finger, qōlāku, 'nhōlākE.
thumb, skElakwōlāka.
leg, skwāqut.
knee, k·'paúicHEn.
foot, s'pāaHin.
bone, k·wōkwōEtl.
skin, cīpás.
blood, p'tíla.
liver, kāla.
fat, skwōkwEtc.
tail, cūcpa.
rib, ts'kāltūq.
heart, cwākuk *or* sQākuk.

Terms of the Principal Animals known to the StlatlumH.

bear (black), k·ōqwēEq, mēakatl.
„ *(brown),* tcuk·ᵘlēn mēakatl.
„ *(grizzly),* 'stlātlālEm.
beaver, s'kelaú.
beavers, ē s'kelaúa.
bee, skEāzuk·.
bee (bumble), k·wuzkwuzāliqEn.
butterfly (generic), pācít.
chip-munk, 'nk·ukquk, kwúmqin.
cougar, cwEwōa.
crane, smōk·wa, skwūlqan.
crow, cāā.
deer, stlōla, *or* ctlōla.
dog, skāka.
duck (gen.) sqaiEk.
eagle (whitehead), spilkwakEc.
eagle (black), yuqElá.
elk, t'katc.
flea, klōpEzatc.
fly, cuk·cicuk·, H'māz.
frog, pāpētla.
goose, kwicēuq.
grasshopper, tlukatlúka (on a mat), so called because of the noise it makes when flying.
grasshopper, tcāntcEn.
ground-hog, cēEkcēEk (=whistler).
hawk, skuz.

horse, EnkEtltcicḳā́ḳa.
jay (*blue*), kEwā́zaz.
kingfisher, tzuls.
lizard, nEkÉluqca.
oolican ("*candle fish*"), swḗwa.
otter, l'Ehatz.
owl, skälū́la.
pigeon, hämḗwuz.
rabbit, skwīḗtc.
rat, háwint, Quz.
raven, Híla, Hilaṓl.
robin, skwḗEkuk, swḗEk·.
salmon (gen.) stzṓkwāz.
,, (*spring*), skwúqEm.
,, (*sock-eye*), laúwa.
,, (*cohoe*), tcā́win.
salmon (*dog*), kwā́luq.
,, (*humpback*), hā́loz.
,, (*steel-head*), kaíwaq.
swan, skupEmḗuq.
trout (*gen.*), zitzkwāz.
,, (*spotted*), kwicpátl.
,, (*silver*), stlḗukcutl.
weasel (*in summer*), kumkúkum.
,, (*in winter*), t·lukt·lct·luk.
wild cat, s'kutzā́mic.
wolf, skaúam̤.
wolverine, tc'ḗkEn.
woodpecker, ckwilā́tEn.
,, k·nēEk·.
,, tcṓkezuks.
wren, tcEtū́.

General Glossary of the Commoner Words.

able, can, qaitlitc.
I am able, qaitlitc-kan.
above, tEqā, tū́qa, tuḳa.
ache, pain, sore, kwälkwelt.
I am sore, kEn-kwälkwelt.
I am sore in the leg, kwäl-Hín-tlkan.
across, k·lâk·.
go across, näc k·lāk·.
admire, to, kwā́mcin.
I admire, kwā́mcin-tlkan.
adopt, to, wonzyḗpkEl.
I will adopt him, wonzyḗpkEltlkan kEtl s'nītl.
advice, lúkaluq.
advise, to, tcūnā́mEn.
I advise you, tcūnā́mEn-tcḗ-tlkan.
adz, klāmín.
afternoon, kEn múlakwa.
afternoon, (*later*), rapÉlmin.
again, hū, mṓta.
aid, help, to, nōk·an.
aim, to, tcṓtlukcam.
air, breath, cūp.
alder-tree (*alnus rubra*), kwElṓlāz.
all, tā́kEm.
alone, pEpElätcū́t, from pā́la, *one,* and tcūt (*self*).
always, pā́pEt.
anchor, nätcā́nätEn.
anger, to, kElḗil.
animal (*generic*), tcē.
another, hṓEnkElta.
answer, to, aitcEn.
anybody, tákEma, täḳEncwā́t.
apple, k·wEṓp.
apple-tree, k·wEṓpāz.
approach, to, s'tlā́tlä.
I approached the house, s'tlā́tlätlkan tē tcítūQ.
arise, stand-up, to, tā́tliH *or* tā́tl'EliH.
arouse, to, Qā́kan.
I aroused him, Qā́kan-tlkan-tō s'nītl.
ashamed, ṓzōm.
I am ashamed, ṓzōm-tlkan.
ask, to, caúwin.
I will ask, caúwin-tlkan kEtl.
astonish, to, tEkā́k·.
ashes, skwilátlkūp.

autumn, cṓEz.

awl, sqaúwEtl.

bachelor, kaíūqmanict.

bad, kul.

bail, to, tlōkōwḗtl.

bailer (*instrument*), Entlōkwētltén.

bait, mā́mil.

bake, sk·wólEm.

ball, mā́kup.

bark, to, wā́zam.

he is barking, wā wā́zam.

bark (*of tree*), tlā́k·wom.

basket, ts'lä.

beach, cḗqutc, *or* cúqatc.

beat, whip (*to*), cíkEn.

beautiful, kwämṓkmEt.

born, to be, kEhálha.

bed, ā́qaitctEn (thing to lie upon); Enrōīit-tEn (sleeping-in-thing).

beg, to, qÉlentcam.

below, down, k·lEp.

down stream, Enkṓkwitcha.

belt, zā́pwin.

bend, to, kṓtzun.

bent, Eskṓtz.

berry, skwEl.

big, large, quzū́m.

billow, wave, HilīHElēliH, snákuq.

bind, up, to, zṓcun. rútcin (=to tie up).

birch-tree, kwutlēnáz.

bird, spápazōza.

bite, to, klā́lEn.

bitter, tuq.

black, k·ōk·QéEq, *or* k·ōqwḗEq.

blackberry, skṓlmoq, tcätcṓca.

blanket (*native*), swṓkwatl.

blanket, lEkwā́z.

blind, s'nEmnEm.

I am blind, s'nEmnEm-tl-kan (statement of fact form).

I am blind, kEn-Ec-s'nEmnEm (responsive form in answer to question).

blood, p'tíla.

blow, to, pōn; *blow it!* pōnmatl!

blue, kwuzkwaz.

blush, to, tcäkṓc.

boil, to, pṓtlEtl.

bore, to, cqútuk.

borer (*instrument*), qútuk-min, *or* qútuk-tEn.

borrow, to, kótlEn.

both (*of us*) n'anawoc-katl="two-we," *cf.* "all of us," katl-tā́kum.

bottle, 'n mḗkēl-tEn (constructed from salmon-skin).

bottle, päpaú (constructed from the sound of air-bladder of fish).

bottle, tc'mā́nik (constructed from the gut of an animal).

bottom, nEā́tcuk.

bought, nctṓqup.

bow, to, kwinṓcEm, *ad litt.* (to turn the eyes earthwards).

bow, a, tṓqEatc.

bowels, guts, tc'mā́nik.

bowl, 'nklaúkamin.

box, qútcim.

boy (*little*), tūū́wit.

boy (*youth*), tūḗwit.

boys, tūtūū́wit, tūtūḗwit.

braid, to, skā́kätla.

she is braiding, wā käkā́tlam.

branch, kEmā́kict.

break, to (*wood*), kaúqōq.

„ (*rope*), klélōq.

„ (*flat things*), kāpúkwa.

„ (*round things*), kācúka.

„ (*up, spoil, destroy*), kulwḗluq.

bridge, 'nk·lā́k·a min (thing that goes across).

bright, wúk·auk·um.

bring, to, cḗmac, tcEā́cEc.

broken, split, Ecpuk·^{u}.

bucket, water, qElā́ka.

brush, k·lṓamin.

burn, to, k·w'tlīp.
burnt, pā́men.
bury, to, EclEp.
bush, kṓqkwaōq.
button, ā́qauc.
buy, to, âz.
bye-and-bye, kuzawṓna.
call, to, wEaú.
calm, quiet, túkwup ; *calm water,* k·lṓEl.
camp, tcētwom.
camping-ground, 'ntcätcítūQ-tEn, from tcītūQ=(house).
can, Häitl *or* qaitl.
candle, torch, light, c'tcak·^{u}; *lantern,* 'ntcauk·^{u}tEn.
canoe, k·lâz.
careful, tzōmēnēlEq.
I am careful, tzōmēnēlEq-kEn ; *he is careful,* EctzōmēnēlEq.
carry, to (in hand), stukac ; *I carry,* stuk-tl-kan *he carries,* stukcEc.
carry, to (on shoulder), 'nk·ēhÉk·mēn.
„ *(on back),* zaqEndj ; *he carries it,* zaqEndjcEc (*cf.* c'zā́qEn, a pack).
carry, to (under arm), 'nk·'māqEnmēn.
carry, to (on head), 'nk·ēläkḗnmēn.
carve, to, 'ntcūwā́lap. (This term is applied to the carving of crests and totems.)
cast, throw, to, tzā́k·amīn.
cedar tree, tcā́täwoz.
cedar-wood, ctsúka.
cellar, tcḗpōEn.
chair, seat, sk·ēluk·.
change, transform, to, nā́kEn.
charcoal, sk·ozṓtcik.
chase, to, kā́lnEm ; *I chased him,* kā́lEn-tl-kan-tō.
cheap, Eck·wṓa, lḗluk.
cheat, to, nEēwoqzā́nac.
chew, to, ḗcauwEn ; *chew it !* ḗcauwEnmátl.
chief, kṓkpī, *or* kwṓkpī.
chiefs, kwākwōkpī.
child, skukumēt.
children, skwumkōkōmèt.
choke, to (by external pressure), lḗpatlkwEtan.
choke, to (by swallowing), kEnhúkatlkwelta, āk·auwḗtl.
chop down, to (a tree), k·lṓtckam.
circle, Ezúnic.
clay, ckútlct.
clear (of water), luk·alḗEq.
„ *(of sky),* Hṓkōqkwem.
climb, to (a tree), k·l'k·ēwiliH.
„ *(a mountain),* qā́tlEm.
close, near, Ectlā́.
cloud, ckwṓlEl.
cold, ts'ēp, Hutl.
comb, to, wēHuk·^{u}-tEn.
comb your hair ! wēH'kwamtlkauq !
come, to, klḗEk.
I am coming, klḗEk-tlkan.
companion, comrade, snúkwa.
compassion, pity, mṓsEmētc.
corpse, cwilā́tlip, Eczōk·.
cotton-wood-tree, nuk·^{u} nḗk·wāz.
crab tree, k·wEṓpāz.
cradle, tcipalḗn.
creek, stcūā́wuq (*large*) ; stcūṓwuq (*small*).
crooked, skōts.
cruel, hōnEkā́tla.
crush, to, pḗtcin ; *crush in the hand,* lḗpēn ; *with feet,* kEwā́tEn.
cry, to, élal.
cut, to, nḗkēn.
cut, a, Ecnḗk.
daily, tā́kum Eckā́it, zēza Eckā́it.
damp, nṓac.
dance, mṓtsōm.
dancer, a, mōtsōmṓtl.
dark, k·lEpEtLpEm.
darling, dear, slukcḗitl.
dawn, nánatūQ.

daybreak, Eck·āitwélEH, tcitlpṓlmūq.

day, Eck·ā́it.

deaf, 'ntukwitkwána, tlúkwina.

deceive, to, kā́kEza.

deceiver, a, kEkEzṓtl.

deep, 'nk·Epám.

deer hide, k·Eátit.

desire, wish, to, cHatl, *or* cqatl.

I want some water, aukᵘalmEn-tlkan wā n'cHatl.

I want to drink, kEnHatlmEn kwEndj wā ṓkwa.

devour, to, sā́kwānEm.

I ate it up, sā́kwa-tl-kan-tō.

dew, chōk.

different, cḗaQEtl.

difficult, qátl.

dig, to, áqHEl.

dim, kākwíckwiemá.

dine, to, 'nkumṓlukEnam.

dirty, ckEt·kEt·.

disappear, to, kEhḗmatūa.

discover, to, pon.

I found out, póntlkan; *he found out*, pónac.

dish (*large*), slā́qutc.

„ (*small*), tlítlqutc.

diver, a, 'nkumṓlukEnamṓtl.

dizzy, Encilikpṓc.

door, 'nkḗqutc-tEn.

door-way, cípic.

down, stlḗtlau, *or* stlḗtlō.

drag, to, Qṓkwem.

dream, to, kwilēkwilauq.

drop, to, kwīc.

drown, to, wōk·ᵘ; *drown it!* wṓk·ᵘEnmatl.

drum, (*drawn skin*), pūláka.

„ (*wooden*), k·auát.

each, tē pála; *ad litt.*, "the one."

earth, tEmḗúq.

easy, lḗluk.

eat, to, k·á, sákwan, *or* tzā́kwan.

echo, p'aúwitc.

eddy, zazílkwa.

elder-tree, k·aigElp.

enemy, Hmän.

enough, tcūk·.

evening, rap.

fall, to, kwīc.

famine, tā́īt, *or* tEm taíit.

I am hungry, táīt-kEn.

far, kakaú.

fasten, to, Erútcin (with rope); Ecrutc, *he's tied it up*.

fat (adj.), k·ḗqain; *a fat person or animal*, k·wutck·wōtc.

fat, (*soft*), skwṓkwutc.

„ (*hard*), k'utatl.

„ (*bear*), 'skwōtc.

fear, to, päkwō.

I am afraid, päkwō-tlkan.

feather, ṓk·wEl.

feel, to, tcā́can.

I feel, tcácan-tlkan.

fern, cakṓpaza (*Pteris aquilina*).

fern-root, cáak, „ „

fight, to, k·lḗEkwEntūwEl.

file, zúk·amin, tsā́mElic.

fill, to, k·ṓlōn.

find, to, pōn.

finish, to, tcū́k·ᵘ.

fir (*red*), Ezyupṓl.

„ (*white*), munḗtlEp.

„ (*spruce*), tcáqoz.

fire, cpā́mic, rṓlEp, *or* wṓlEp.

firewood, cpámic.

fire-place, 'npā́mic-tEn.

fire-drill, cwṓEl.

fish, tcṓkwāz (*big fish*); ts'Ekwāz (*small fish*).

fish, to, tcṓkwāzam (*big fish*); ts'kwāzam (*small fish*).

fish-bone, s'tcam.

fisherman, tcutcṓkwwazam.

flame, rṓlEp, *or* wṓlEp.

flat, tcūā́clōmōq.
flesh, slḗuq.
float, to, pā́puk·ᵘ.
flower, spā́k·Em.
fog, spṓtlit.
food, skä.
freeze, to, kḗmälitc.
fresh, tcítcil (Thompson, tcítci).
finger, ’nhṓläka.
gamble, to, tlikamaúwac.
gambling-stick, k·uk·ṓEtl (bone).
ghost, spirit, cūqlátlip, cQūlátlip, mEzā́tc (=breath or spirit of a shaman).
girl, cī́yaktca ; *girls*, cukyḗyuktca.
give, to, Qḗtckīt, *or* QḗtcHēt.
glad, tcā́auq.
glove, mitten, hḗwäkä.
good, ā́ma.
good-bye, hṓmātl, kEnā́kū.
grass, clúlkEm (*long*), ctcúpuz (*short*).
great, large, quzṓm.
greedy, Qōmitc (from Qōm, *quick*, and itc, *mouth*.
green, kEkwilā́a (used for *yellow* as well).
grind, to, ’nsukaúcEm.
grow, to, rḗyEp.
guide, to, tcūtliQā́lEm.
gum (*pitch*), kwälētl ; *pitch-wood*, kwḗoq.
hail, sk·uk·hṓc (=tears, eyedrops).
hard, k·ḗEq.
hark, listen, to, kālā́n.
hear, to, kanḗm.
hemlock-tree, pōt·lEtnāz.
itch, wótEq.
jump, to, kaíliH.
juniper-tree, pū́ntlEp.
keekwilee-house, cEḗcitkEn.
keep, to, wEā́n.
kettle (*basketry*), ’nṓkwätEn.
„ (*wood*), stcíma.
kind, good, ā́ma.
kiss, to, ’ntlṓktcin.
knead, to, zā́kEm.
kneel, to, qētlḗlEkam.
knife, QEēktEn *or* wī́k·EtEn.
knock, to, ’npā́tcam.
know, to, zwā́tEn.
ladder, ’ntlā́EqtEn.
lake, tcälā́tl.
lame, zṓQuk.
land, tEmḗuq.
language, ’nkwälū́t-tEn.
large, quzṓm.
laugh, to, ’nk·cánik *or* ’nk·zanEk.
lazy, kēEkElōtl.
leak, to, t·lā́uk ; *it’s leaking*, wa t·láuk.
leaf, pitc-kEtl, (=it will drop or fall).
leather, cēpā́z.
leave, to, klḗliH.
lend, to, kwṓtlin.
liar, kEkEzṓEtl.
lie, to, kā́käza.
lice, mÉkin.
lick, to, sämā́n.
lie down, to, ā́qaitc, *or* ā́qētc.
life, mā́wel.
lift, to, qā́tän.
light (*both sunlight and moonlight*), tcítlip.
lightning, k‘wElk·wElkṓcEm (=“he (the thunder spirit) is opening his eyes”).
line (*cedar withes*), k·wṓtsEm.
„ (*fishing line*), ḗawEctEn.
„ (“*flat*” *or plaited line*), k·Eçā́lEq-En.
little, small, kwḗkwEc (voice dwells on “ē” to mark the smallness of thing described).
liver, k·ā́la.
log, Eczḗk.
logs, EczukEzḗk.
long, zā́qEt.
lose, to, pī́lip.
I lost it, píl’ptlkan.

loud, wonaúQitc.
man, skaúyūq.
men, skaíyukyūq.
maiden, k·ā́mōz.
maidens, k·umk·ā́mōz.
make, to, mā́icin.
maple-tree, k·Emlā́z.
maple-tree (vine), cētstlip.
mark, to, smEtc.
mask, smā́kwā.
mat (sleeping), släwén.
„ *(floor)*, tcā́kHin.
„ *(sitting)*, tcā́kuk.
meat, tcī.
medicine, kā́lwEt.
melt, to, zā́auq.
midnight, tḗEtQolwā́c.
mid-day, kEnirípa.
mid-winter, 'ntḗEthōcíkEn.
mind, 'nc'p'tḗnōcim.
mine, Entcū́wa.
mistake, to, 'nḗQEz.
mix, to, mā́t'lan.
moccasins, cḗtltcō (from tcō=foot).
moon, k·'lánämtEn.
morning, nā́nätuQ.
mountain, EckwÉm.
move, to, zúkEn, cḗEk.
much, Qōḗt.
murder, to, sk·āsā́kam.
murderer, a, sk·āsā́kamṓtl.
naked, tlṓtlok·^{u}; *he's naked*, wā tlṓtlok·^{u}.
name, skwā́tcītc.
narrow, tḗtqa.
near, Ectlá.
needle, pā́tkwa.
net, spā́tsin.
night, cḗtect.
no, Qoāz.
none, Qoāz kā́ti.
not, Qoāz.
now, aitl.
nut (hazel), k·ā̂pōq.
old (man), kutLmḗn (plu. kutLkutL mḗn).
„ *(woman)*, kutLmímEn.
orphan, wṓwäcūt
outside (house), ā́l'tsEka.
pack, to carry, zā́qEn.
paddle, hṓmEt.
pail (water), qälákE
pain, to, tlíkwonEm.
paint, Qḗkúsemin.
I paint, Qḗkwēntlkan.
parents, släleltEm.
path, trail, HwEtl.
paw, spEáka (=fore paw), spEáHyin (=hind paw).
peel, to (bark), tlaúwElkwEn.
„ („ *with knife*), ṓqwElkwEm.
„ *(oneself, to undress)*, tlṓk·wōntcūt.
peep, to (through a hole), 'nkElhälṓcEm.
„ *(from behind anything)*, zák·ēl.
penis, spúlok.
people, ṓqwElmūq.
perhaps, skā́nac.
plate, dish, tlítl'qutc, (small) tlā́qutc (large).
play, to, cā́icEz.
point, to, tcū́tlum.
poor, kElEkEnantcūt, kwúnkwänt. mōzEmḗtantcūt.
prick, to, tēákain.
proud, cḗakanc, Enskuzā́m.
push, to, qḗkin or Hḗkin.
put, lay down, to, kḗtcin.
quarrel, to, kElḗil.
quiet, ckäp; *talk quietly*, ckäpitc.
race, contest, k·ultanwánaqa.
rain, ckwīc (from kwīc, to drop down).
raspberry (red), cEā́itcuk.
„ *(red-cap)*, tlḗkäk·^{u}.
„ *(salmon-berry)*, tūwā́n.
recognise, to, cū́qten.
raw, Ecqaiū.

red, tcuk·’tcēuk·.
red-hot, k’umpā́kalitc.
„ (*stone*), tcäkwā́litc.
remember, to, kälā́qstōma, lukaláqic.
I remember, käläqtlkána.
you „ käläqtlkauqa.
rest, to, zā́mEm.
I am resting, zā́mEmtlkan.
return, to, p’ā́nEt.
I return, p’ān ’t-tlkan.
revive, to, ’npēralṓcEm (=to sigh and open the eyes).
reward, to, hā́k·En.
I will reward him, hak·Entlkan kEtl snītl.
rib, tc’kā́ltō.
ring, a, k·ēak·Enā́ka.
ripe (*also cooked*), k·wol.
river, cät’l.
roast, to (*on a stick set in the ground inclining towards fire*), skwólEm.
„ (*salmon cut open and placed over the fire*), kúpEm.
„ (*salmon not cut open and placed over the fire*), ckī́tcHEn.
„ (*meat over the fire*), ckEpā́tltza.
„ (*salmon split open and held in the cleft of a stick*), klā́kca.
„ (*salmon, whole, by thrusting spit in its mouth*), ’nqḗwitc.
rob, to, näk·ᵘ.
robber, a, nuk·ᵘ näk·ᵘṓtl.
roof, s’k·āz.
root, k·läkwā́mElauq.
rope, line (*plaited flat*), k·utläliqEn.
rope (*cedar withes*), k·wútcEm.
rose (*wild*), kÉluk.
round, Esk·úmōq (plural or several, Esk·úmak·umōq).
rub, to, mḗkwēn.
run, to, kḗtlēl.
I run, k·ḗtlēl-tlkan.

salt, ts’ul (=taste of fresh meat).
salt-water, k·ōt·l.
same, like, tzultzēlaklō.
sand, sk’ā́Epa.
say, to, tcūt.
scald, burn, kw’tlEp.
scalp (*salmon’s*), klElwēṓk·.
„ (*man’s or animal’s*), cīpázōk·ᵘ, *cf.* cīpā́z=skin.
scold, to, kElḗlmēn.
scrape, to, pā́qan.
scratch, to, cṓpūn.
scream, to, ḗtlaqtcam.
sea, k·ōt·l or kwōt·l.
search, to, Qḗlin, t’Qṓcmēn.
seed, clipHā́l.
see, to, ā́tsqEm.
seize, to, k’ailEHmēn-túkEn=“to jump-take.”
sell, to, taúwom.
send, to (*person*) kicnán.
„ (*object*) nacakā́um.
sew, to, k·lokōHā́l.
shadow, shade, mEnEmán.
„ *reflection*, skukEnḗwatl.
shake, to, t·lṓkQin.
shallow, ’nuqwḗwEcim.
shaman, cwonā́m, kwEḗkwilauq, zū́wa, zūwḗn, kwḗcHētum wa kwEḗkwilauq.
sharp (*of edged tools*), QúzQuz.
„ (*pointed*) tcímitsmukc.
sharpen, to, ’nzūk·ṓcEn.
„ (*bring to a point*), zuk·ukcan.
she, her, s’nītl.
shine, to, wok·aúEkum.
shoot, to, kwṓcim.
short, tlāk·ḗEk·at.
shout, to, wEaú.
shove, to, kwḗEwin.
show, to, atsuqā́lctōmH.
shrink, to, raícElEq.
shut, to, k·ḗqtcan.
sick, ā́lsEm.

sickness, sEā́lsEm.
sight, tūhṓc.
silent, k·líkctkum.
simple, easy (*to get*), lḗluk.
sing, to, k·lḗlēm.
sink, to, ’nEmā́Ec.
sit, to, mḗtcuk; *sit down!* mḗtcukmatl.
skin, cīpā́z.
skull, k·ṓmkEn.
sky, ctlēEkut.
slap, to, t·lúk·won.
slapping, tlúkwitlk·won.
slave, cā́wit, cī́cwit.
sleep, to, rṓit.
sleepily, rōitólmin.
slide, to, kwEtQaíliH.
„ (*of mountain*), cEaúq.
slip, to, kwÉtuq.
„ *trip, to*, kwēṓHyin (*on the level*), kwÉtoqHyin (*on a slope*).
slow, zṓwōE.
smart, quick, lúqEluq.
smell, to, cūmū́n.
smoke, spilṓk (*going up straight*), cmúkEn (*spreading all about*).
smother, to, lēpitcā́nEm.
snail, k·laiā́k·En.
sneeze, to, hucnā́na.
„ *a*, nicnā́na.
snore, to, qōqwElukc.
snow, mā́ka; *it's snowing*, wā mā́ka.
snow-shoe, tsōtsHyEl, tcōtsqEl, or tcōtsqEn.
soft (*to the touch*), k·’upk’ap.
„ *easy* (*to break*), qā́qkwam.
sold, taum.
solid, ’nkumpā́tltca.
some, mṓta; hōmṓta = some more.
song, ḗtlum.
soon, kālál.
soot, sk·ṓtlōtc.
sore, kwā́lEkwilt.
soup, ctlūm.
sour, t’zElt’zṓl, tuq = bitter.
sow, to, pṓkwEl.
sparks, wólulik or rólulik.
spawn, nauwū́wa.
speak, tell, to, kwalū́t.
spinal column, ’núqtcik.
„ *cord*, ’ntEtlkā́lēpatEn.
spinster, yuktcā́manict.
spirit, soul, cmā́wEl.
spit, to, p’tḗqwon.
spoon, ctlākḗmin.
spread, lay, or put down, to, kḗtcEn.
spring, släkā́kEtkwa (= to bubble up).
squeeze, to, lḗp’ēn.
squint, to, ’nkṓtsalōs.
stand, to, stätliH or statlEliH.
star, ’nkakōs’nEt.
stare, to, sEā́tsuqcEc; *he is staring*, wā-sā́tsuqcEc.
steal, to, nauk·^{u}; *a thief*, nuk·nauk·ōtl.
step, to, cḗEquqEnEm.
stew, boil, to, tcḗaqain (*soup*, ctlūm).
stick, to, tsúk·pan, tsúk·Ep.
stink, to, QōQṓh.
stone, kÉtla or kútla.
stoop, to, tlā́kōt.
stop, to, kā́k·lēla.
straight, Eckwā́p.
strange, fresh, tcītcil.
strap (*head*), mā́kēin.
stream, c’tūaúq.
stretch, to, tcícin.
strike, to, cíkEn.
string, cil.
strong (*thing*), k·ēuq (*animal or person*), rulrul.
stumble, to, k’wṓk’wēwäm.
stump, ’nk·’wōs.
stutter, to, Ec’nā́Enatc; *he's a stutterer*, wā Ec nā́Enatcōtl or nētl Ec nā́Enatcōtl.
suck, to (*the breast*), kEám.

suck, to (*something in the mouth*), tcṓmōn.
„ („ *held in the hand*), klṓkōn.
summer, tEm kum'p.
sun, snúkwum or snúk·um.
sun-beam, swā́qEts snuk·uma = legs of the sun.
sun-rise, ṓtska snúk·uma = outside the sun.
sun-set, rap = evening.
sure, certain, wōnaúqnūn.
surprise, astonishment, tukā́k·, ctukutcmēn.
I am astonished, tukā́k·tlkan.
swallow, to, k·'uminc.
sweat, to, hā́au.
sweat, perspiration, chā́au.
sweep, to, ā́qwElap, *cf.* broom, ā́qwelap-tEn.
sweet, k·lEq.
swell, to, pau.
swim, to, 'nkā́iliH.
swing, to, papḗla.
tail, cū́cpa.
take, to, túkEn.
tale, swäl.
talk, to, kwālū́t.
tall (said of persons), zā́Halkwum.
„ *long* (of things), zā́HyEt.
tame, tcúktcāk.
taste, to, k·lā́namEn.
tattler, kwālūtṓtl.
teach, to, tcūnā́min.
I will teach you, tcūnämin-tcē-tlkan-kEtl.
tear, to, tcor'pan.
tear (*lacrima*) 'nEkwEálōs, skúkhōs = drop (applied to hailstones).
tell, to, skwāl.
I will tell you, skwālEn-tcē-tlkan-kEtl.
that, tEṓ.
thaw, to, tcū́wEq (*ice*), tḗEm (*snow*).
there, tūṓ.
thick, p'tlūtl.
thief (*habitual*), nuknaukṓtl.
thin, mḗm'ca.
think, to, p'tḗnōcim.
this, tcEā́.
throw, to, ts'āk·.
throw it away, ts'ā́kamēn kEkaú.
thunder, ckílikaloq = knocking noise, skínkEnap = tapping noise.
tickle, to, 'nEk·Ezā́nkEn, or make to laugh.
tie, to, rútcin.
tired, weary, kwElkwál.
to-day, tl'kṓnca, sk·ēt.
to-morrow, nátuQ.
tongs, kwisqÉna.
toothache, k·ā́nic.
torch, ctauk·ᵘ.
trail, Hwätl.
trap (*weir*), tcilmēn.
„ (*basket above weir*), kwiltcáza.
„ („ *with distended mouth*), 'ntcukautcḗn.
„ ("*fall*" *for small animals*), tcḗtcilōc.
„ ("*fall*" *for big animals, bear, etc.*), Hā́tōc = heavy to lift.
„ (*generic*), kā́kiltEn.
tree, cyap or crap.
tremble, to, t·litlt·litlnÉm.
trip, to, tlṓqpukc = to fall on the nose, tlṓqwupqEn = to catch one's foot.
turn, to, pElkṓcEm.
turn over, to (of things), pÉlkan.
turn, to (by itself, without agency), pElkḗlEq.
twilight, kEkwā́ca.
twist, to, k·lōpílEq, Ectlṓp = it's twisting (said of crack in splitting wood).
ugly, tzíztyuzkEt.
uncover, open, to, wólkwan.
under, 'nk·lpā̆nEk, s'tlípca.
understand, zōwā́tEn.
I understand, zowā́tEn-tlkan.

undress, to, tlṓkōtcūt, tlṓk·'lEq.
unfasten, undo, Ectḗōh.
unripe, Ecqaíū.
varnish, to, kEkcípa.
village, EctcītūQ.
voice, 'nkwālū́t-tEn.
vomit, to, wā́t·lik·.
wade, to, tcā́tcwäm, tcā́qwam = to take a few steps into the water.
wait, to, kā́lEm.
wake, to, Qāk.
walk, to, mátuk.
wall, qúltEn.
wander, to, mEtmámEtuk.
war, k·ultōwaúq.
warm, k'úmEp.
wart, zezṓōk.
wash, to, tzā́wän, cauQEm (= to wash oneself), wā cauQEm, *he's washing himself.*
watch, to, Enḗitcuqcac.
water, kō or kwō.
wave, billow, HilH'likēliH.
we, us, wicnḗmōtl, s'nḗmōtl.
weak, kḗEkEl (said of persons).
„ Qōaz kwac rulrul (= not strong; said of anything).
weary, kwilkwál.
weave, to, k·utcḗtsa (blankets), kutckál, (bands, straps, etc.).
weave, to (anything), Eckútc.
wedge, Qāēt ("Kaiyám's wedge," ne Qāḗtca kaíyam).
weep, cry, to, kuk·Qṓcam, ḗlal; *he's crying,* wā ḗlal.
weir, tcílmēn.
when, ēkā́nmacac, (past), kā́nmacac (future).
when (conditional), Etl.
where? Enkā́? 'nkā́?
which? unkā́? nētl kō unkā́?
whisper, to, ckā́kapitc.
whistle, to, QítEn.
white, puk·.
who? cwät?
why? wā-kā́nEm?
wide, ctl'k·ā́lap.
widow, Eczā́tEn.
widower, „
wife, cimám, nḗū (when addressed by husband).
willow-tree, t'qā́tlpâz.
win, to, t·lōQōm.
winner, t·lōQōmṓtl.
wind, ckúqEm.
wing, st·lakā́l.
wink, to, klōtsālṓcEm.
winter, tEm qutl ("cold time") tEm ctṓtik ("cold-wind time").
wipe, to, ā́pan.
wise, lúqaluq.
witch, zṓwa or zū́wa, cwEnā́am.
with, ḗūwa.
I will go with you, nackan eūwa Ecnū́wa.
woman, cyā́kEtca.
women, cyukEyā́ktca.
wood (*gen.*), mū́liH.
wool (*gen.*), kwätc.
wring, to, k·lṓpūn.
yawn, to, Echā́ū.
year, Qutpäzā́nōQ = completing the circle.
last year, ēzā́nōQ'mac.
next „ zā́nōQum-kEtl.
yell, to, ḗtluqtcam.
yellow, kuk^{u}'lḗa or kukwilḗa.
yes, ē.
yesterday, ēnā́tūQac.
you, wicnū́lap, s'nū́lap.

COLOUR AND RACE.

The Huxley Memorial Lecture for 1905.

BY JOHN BEDDOE, M.D., LL.D., F.R.S.

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THE Huxley lecture is usually said to be commemorative of the great man whose name it bears. I am not sure that I quite like the adjective. The character and achievements of Huxley, the impression he made on his country and his time, are not likely to fade from our memories. The lecture is rather, I think, a token of our gratitude to him than a necessary reminder of his services.

Few departments of anthropology seem to have interested him more than that of colour in connection with race. The terms Xanthochroi and Melanochroi, with the things denoted thereby, remain to testify to that interest.

The late Sir Henry Rawlinson, a widely-travelled man and a good observer, once remarked to me that "colour was no part of type." As one who had given some years of his leisure to the subject, I felt somewhat discouraged by this dictum of a revered senior.

"No!" said he, "and I will give you a case in point. Herodotus says the Egyptians planted a colony in Colchis, whose descendants survived there in his day—dark and curly-haired. Well, the Mingrelians at the present day have curly hair,[1] but it is quite frequently yellow or fair; the type remains, but the colour has altered."

So said Sir Henry, and there are still some of his opinion. There is an ingenious theory which attributes the deep and brilliant "Highland red" hair, found in the so-called Kelts or Gael of the British Isles, to the effect of a northern climate in depigmenting Deniker's Littoral race, by some designated Atlantean.

Anyhow, it is a prevalent idea that colour in man, being merely superficial, is of very small account compared with his osteology. But this is really an exaggeration. If colour is mutable, so too is bone-form, less quickly or visibly, maybe, but mutable for all that. In Egypt, in Russia, in Bohemia, Bavaria, Mecklenburg, it is difficult to believe that widening of the skull has or would not have taken place, even if the influence of admixture of blood had been excluded; and when Egyptologists tell us that the Egyptian skull, barring this little increase in breadth, is very like what it was six or eight thousand years ago, we may reply, "Why should it have altered? The circumstances, the media, have not altered much; and the successive hordes of immigrants or invaders, from their paucity of numbers, from their unsuitability to the climate, or from the mutual balancing of their physical characters, were not very likely to affect it much."

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[1] Deniker, *Races of Man* (transl.), p. 355. It occurs among the Guriels, too, but I am not aware that it does among the Lazes, of whom I have seen a great deal.

The great changes that appear to have taken place in Swabia and Bavaria, and about Hallstadt, are quite explicable, as I at least, who was a mute Ammonite before Ammon and De Lapouge, am disposed to believe, without calling in the operation of anything like spontaneous variation in form. Still the cases of the Mecklenburgers, of the Bohemians, of the people of the Rouergue, cited by De Lapouge, and of the Muscovites, which convinced no less an authority than Bogdanoff, do certainly make one a little doubtful. On the other hand, consider the case of the Budini, plausibly identified with the Vod or Votiaks, still found in or near their ancient locality. They were noted as redhaired in the classic age, and now, after 2,000 years, they have among them a larger proportion of redhaired persons than any other tribe or nation.

The principal drawbacks to colour as a mark of race are the following, relating especially to hair :—

1. The change which occurs in individuals with advancing age. In this country the index of nigrescence of school children darkens, usually, about twenty degrees before they arrive at early middle age; and even after that the hair continues to darken slowly until it begins to turn grey. Red hair does not darken in the same way, as a rule, but in those cases which Virchow would have looked on as defective brunets, it may even change into something not far removed from black. The iris-colour also changes with age, though very slowly after infancy. At first it darkens, but later on pales again. Such instability, besides increasing difficulties of observation, is suggestive of small value in the attribute.

2. Again, the apparent fugitiveness of the colour of hair after death lessens its value as historical evidence. Brown pigment seems to be less permanent than red.

3. The operation of various forms of selection, social, conjugal, morbid, is of considerable importance in impairing the evidence of permanency. I believe De Candolle and I were earliest in the field on this subject; but Ammon, De Lapouge, Closson and Ripley and Shrubsall, have developed the idea very extensively, and with promise of yet greater results. Virchow's and Von Mayr's extensive statistics, and my own observations, showed darker colour in hair, and still more in eyes, in cities than in rural districts, even after allowing somewhat for the greater attraction of towns for alien (in Germany usually darker) immigrants. Livi has shown that the same rule holds good in Italy to a large extent, though there alien immigrants would be more likely to be comparatively blond. And Shrubsall has already given us some solid grounds for basing the difference on morbid selection, weeding out more possible parents from among the younger blonds, whereas the diseases which more affect the brunets, such as cancer, usually operate more in later life.

4. The difficulties arising out of the personal equation of the observer are very great: I will return to them presently.

These drawbacks seem then, nay, they are, considerable, but either they, or analogous disadvantages, apply to the head-form also. Durand de Gros, and after him Ammon and De Lapouge and Muffang and Livi, have shown how the citizen develops, by some process of selection, a longer and narrower head than the countryman; and though the process is not so conspicuous in English towns, Dr. McDonell's figures for London, and mine for Bristol, make it probable that it is really operative here. Such changes imply a converse process at work in country districts, and other fountains of emigration; and thus may be explained the development of brachycephaly in, for example, some Frisian islands and Alpine valleys. Difficulties put in the way of the observer by modes or fashions of dyeing the hair find their analogues in the various processes whereby the head is wilfully or unintentionally deformed. Even in Germany there is no doubt that brachycephaly is exaggerated in many cases by the pressure of a hard cradle.

Again, Professor Oloriz has well shown how the personal equation affects the measurement of the skull as well as of the living head: we need not therefore be quite discouraged, when we discover the many impediments that stand in the way of him who would observe the colour of the hair and eyes.

Some of these concern light and distance. Topinard directs his pupils to work "en pleine lumière," and in using his standard samples for comparison, this must be kept in mind. One cannot always choose; and one ought to be able to make proper allowance for different lights, as a rifle-marksman does for distance and wind; but I prefer the shady side of a street on a sunny day.

As for the best distance, M. Bertillon working for identification and police purposes, and dividing his eyes into 7 and his hair into 10 classes, directs the observer to place himself at 30 centimetres or about 1 foot from the object. This is far too near for ordinary purposes. The aim should be to work at distances at which the iris-colours fall naturally into three or at most four divisions, light, neutral and dark, the first embracing class 1 and part of 2 as depicted in Bertillon's Album, the third including roughly his classes 5, 6, and 7, most of 4 and a little of 3, while the neutral includes his remaining examples. Having always had good sight, I have found from 2 or 3 to 5 or 6 feet the most suitable distances. The hair-shades are of course capable of appreciation further away; but as red or yellow, for example, can be well discriminated at a greater distance than the different shades of brown, one should select and adhere to a certain maximum limit, foregoing anything beyond that. The eyes should be inspected in front, not laterally, or you will put too many into the neutral class, as some British observers do.

When I first began to make systematic observations on human colouring, more than 50 years ago, being, as I supposed, the first in the field, I had to frame a classification. My first system somewhat resembled that afterwards devised by Virchow, which did not cover the entire field, but left a small margin for unusual combinations. This I soon discarded on that account, and framed a schedule with three divisions for the eyes, and four cross-divisions for the hair, red, fair, brown, medium (or light chestnut), and dark, in which I at first included black. Black is uncommon in the east of Great Britain, outside a few towns where there has been much foreign immigration. But I soon found it necessary to add columns for black, thus making 15 places in the schedule, or 30 for the two sexes. With this addition it corresponds to the divisions in common speech, and, I might almost say, in nature; and I think it a pity that it has not been universally followed. The only possible improvement, I think, was that of Topinard, who, with a view to making comparisons with Virchow, divided the light eyes into blue and other-than-blue; but the advantage is slight, and complications are a little increased, especially for field-work. Roberts and Rawson, for the Anthropometric Committee, framed schedules which are incomparable with Virchow's or mine or any others, from the absence of niches for black, and from other peculiarities. Vanderkindere's scheme for Belgium, though better, is in a similar unfortunate position. Topinard and Arbo do not separate black from dark brown, which almost all others do. Meyer and Kopernicki in Galicia, otherwise agreeing with me, amalgamate red and fair hair, which is a very trivial blemish. Retzius and Fürst, dealing with the almost purely blond Swedes, divide fair hair into yellow and *cendré*, which last I suppose includes besides flaxen most of my neutral: but in summaries they generally drop this subdivision. They arrange their eyes as Topinard and I do, into light, neutral and dark; but in the hair they follow Virchow, admitting no medium category. Livi in Italy having very few real blonds, classes my neutrals with them. Browne in Ireland, Haddon, Dunbar in Jersey, Aranzadi in Spain, De Man in Holland, Sören-Hansen and Westergaard in Denmark, and all, I think, of the numerous Russian observers, have employed my plan without modification. Schimmer and Kollmann, of course, followed Virchow's.

I well remember that Mr. Crawford, when President of the old Ethnological Society, said that the mixture of blonds and brunets in one people or tribe was peculiar to Europe. He had seen many lands and peoples, and spoke as the result of much observation; but I did not and do not agree with him. That Brahmins occur with blue eyes and red or brown hair counts for nothing: the Brahmins are of course partly of Indo-European descent, and so probably are the pure Rajputs and the Kattis of Gujerat. But the xanthous type does occasionally present itself in Bengal among the lower castes, as I was assured by a competent anthropologist, the late Dr. James Wise, who at my request undertook to investigate the subject. Again, Mr. Anantha Krishna Iyer, now in charge of the Ethnographic Survey of the Cochin state, tells me that not only among the local Brahmins, but among the Nairs, a high division of the Sudras, occur children with hair of a dull red or auburn colour, which does not become black at maturity.[1] Red hair occurs sporadically among the Buryats and other Mongolian tribes, though here one cannot exclude the possibility of the ancient incorporation of some xanthous tribe, such as the Woosun or the Tingling. Among the Shans in the mountains of Upper Burma fair hair and blue eyes are said to occur, and brown hair among the Lolos in Sze-chuen. I have never seen or heard of a fair Chinaman; and my friend Dr. Colborne, long a medical missionary in those parts, never saw a Chinaman or a Japanese adult whose hair was not black or of the darkest brown; but he tells me that Chinese children often have it of a dark reddish yellow, and Japanese children of some shade of brown. Lefebvre, investigating for Collignon, found one or two red-haired persons on the west coast of Japan, opposite Corea, but none on the eastern side. Brown hair occurs in Manchuria and Corea. Nor have I heard of a fair Amerindian of pure blood, except perhaps in the Mandan tribe; but I do not doubt that they could be met with if they were looked for. In the negro tribes I believe truly xanthous or erythrous persons occur, and are classed as albinos. And both the pygmies of Central Africa themselves, and tribes in their neighbourhood such as the Monbuttu, who may be supposed to partake of their blood, are reported often to have hair which is of a dull brown rather than black.

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[1] He also mentions the occurrence of eyes which are not dark brown, and of some resembling, as he puts it, cats' eyes, with a dark inner and a grey outer ring, such as I should probably call hazel grey.

With respect to red hair, I am disposed to adhere to our master Virchow's view, viz., that it occurred among fair people from excess or abundance of xanthous colouring matter, but among brunets from absence of brown pigment. In favour of this hypothesis is the fact that reddish pigment is abundant in much of the hair that we call black, as among the Jews, among the negro races in general, some at least of the Polynesians, and, I am informed, the Himalayan tribes.

In the Macdonell ranges of Central Australia all the natives have been said to have hair of a dark auburn rather than black; and the Wankerutu to have skins lighter than tribes 500 miles further south, further from the sun.

I have myself seen deep red hair with a freckled fawn-coloured skin and hazel eyes in a Moresby islander; and I am indebted, through Dr. Haddon, to the great courtesy of Dr. Seligmann for ability to say, on his weighty authority, that the same sort of thing is to be seen among the Papuans of New Guinea, both east and west. The particulars Dr. Seligmann has given me enable me to say pretty confidently not only that erythrism is not very uncommon in those equatorial latitudes, but that it sometimes occurs apart from the rather prevalent leucoderma, and without ocular defect; and that there are indistinct indications of its being hereditary. The establishment of a xanthous or erythrous race, thereabout, would not be impossible.

Mr. Browning informs me that the Eheu complexion, as it is called in New Zealand, is said to occur there in the lower rather than in the upper caste, which would probably mean that it belonged to the darker, aboriginal or Melanesian, rather than to the Malay or Polynesian stock. It is well depicted in Angas's drawings, and evidently exactly resembles Dr. Seligmann's and my own erythric type.

It is a common belief, though, so far as I know, not statistically proved, that red hair is apt to occur in families whose parents are of very opposite complexions. If so, it must be, one would say, from an instability of pigmental function, a kind of disturbance arising from the incompatibility of the parents. On a large scale some would apply the hypothesis to the Highlanders and the Irish, both mixtures of blond and brunet elements.

There are of course facts, or reported facts, which would lead one to suspect that red was the original hair-colour of man in Europe, at least while living in primitive or natural conditions with much exposure, and that the development of brown pigment came later, with subjection to heat and malaria, and other influences connected with what we call civilisation. The cases of China and Egypt suggest themselves as capable of throwing a side-light on the subject, but if Terrien de la Couperie rightly derives the Chinese from Elam, the latter set of agencies are unnecessary in their case.

To return. I place red first in my series of hair-colours, both because, on Virchow's theory, it is the contrary of black, and because on that plan the colours shade naturally into each other, which they do not in any other case.

There is not, I think, much difference of opinion as to the relative value, ethnologically, of hair-colour and iris-colour. The hue of the hair seems to be always taken to be the more important and significant characteristic, partly perhaps because it is more conspicuous and bulks more largely in our sight. A better reason is the comparatively small amount of pigment in the eye, compared with that in the hair. When I first proposed and used my now well-known Index of Nigrescence ($N^2 + D - F - R$) which applies to the colour of the hair only, I did so because I thought the eye-colour of less importance, and because I could not make up my mind as to the best plan of standardising it. Topinard, long after, proposed an index for the iris on the same principle, viz., the subtraction of the light from the dark, omitting the neutral. He combines the two indices to constitute a single index of pigmentation. And this is probably the best plan yet devised. Virchow's plan of contrasting the pure, *i.e.*, the blue-eyed blond, with the pure brunet, and comparatively neglecting the intermediate combinations, has of course its own merits, and has been largely used; but its defects in practical application are also considerable. In fact, though not in intention, it makes the eyes the more important, with the curious result, depending partly on the impossibly sharp line attempted to be drawn between blue eyes and grey, that Switzerland comes out with 11 per cent. of pure blonds, swarthy Dalmatia with 15, and the Bukovina with 18, while Obwalden, really a rather fair district, appears with only 2 per cent.!

In these maps, and in the production of this lecture, I have given to the pigmentation of the hair twice the value of that of the iris. That is to say, I have doubled in every case the index of nigrescence, and I have added thereto, or subtracted therefrom, according as it is + or –, Topinard's index of the eye, viz., the excess or deficiency of the dark as compared with the light eyes, this being counted singly, not doubly, and the neutral eyes left out of the count. I have reckoned Virchow's grey eyes as neutral, though they no doubt include my light-greys as well as my neutrals. His brown and my dark eyes correspond extremely, nay, wonderfully well. Thus:—

Percentage of Brown or Dark Eyes.

	Berlin.	Brunswick.	Köln.	Trier.	Leipzig.	Dresden.	Aachen.	Aver.
Virchow ...	30·2	20·2	33·3	38	28	29·4	35·2	30·6
Beddoe ...	26·8	21·5	34·6	36	31·3	30·8	32·6	30·5[1]

Now we have not at present, though we are hoping to have in course of time, the figures for our school-children, figures by the way which, if they are to be of much value, must be derived from the observations of only well-instructed and practised persons. The differences of personal equation in ordinary observers are portentous. My problem was how to correlate the indices of pigmentation in (1) German and other continental school-children, and (2) British adults. This I alone at present am in a position to do, having personally ascertained the requisite figures in about 4,700 adults in northern, western and central Germany, in about 5,000 in Switzerland and Austria, and about 6,000 in the Low Countries. I find that Virchow's figures and my own, when treated on the plan already described, *i.e.*, when in every case twice the index of nigrescence is added to once the index of the eyes (Virchow's grey being taken provisionally as equivalent to Topinard's and my neutral), come out with a difference of about 50 on an average, my adults being by so much darker than his school-children.[2]

Assuming then that the actual difference between adults and children of the same mean age is likely to be about the same in Germany and England,[3] I have reduced by fifty my own figures for all the squads of British adults, after subjecting them to the process already described, in order to give greater weight to the hair than to the eyes. The British (Plate XVII) and Scandinavian (Fig. 1) maps, being based on these reduced figures, ought to be on something like the same standard as to colours with the map of Central Europe (Plate XVI) based on the statistics of children. And you will find in them the same gamut of coloration as in that map, with the exception in Britain of the pink; we do not seem to have any district in Britain which can compare in blondness with some very extensive tracts in North Germany and Sweden.

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[1] My average for 33 English towns was 29·9.

[2] See on this point, the paper of Dr. Guillaume of Neuchâtel.

[3] I say *about* the same, for I have reason to know they would not be identical. A short table, which is appended, shows that the darkening process goes on rather more quickly among the Germanised Wends of Eastern Prussia than among the purer Germans farther west, Pomerania and Posen each sinking 3 places, and Prussia 2, in order of blondness, among the 11 provinces, while Hanover, Westphalia, Saxony and Rhineland all rise 2 places.

In the map of Central Europe (Plate XVI), then, I have used a gamut of nine colours, ranging from pink, allotted to the almost universally fair Saxons and Frisians and Danes of Schleswig-Holstein, Hanover and Oldenburg, and to the natives of part of Pomerania, through red and orange in Prussia, Pomerania, Brandenburg, Mecklenburg and Westphalia, to the yellow of the Rhineland, Hessia, Thuringia, Saxony and Silesia, the green of Franconia and Wurtemberg and part of Flanders, the blue of Flanders, Baden, Styria and Lower Austria, the purple and brown of Alsace, the Ardennes, Bavaria, Bohemia, Galicia, Bukovina, Carinthia and German Tyrol, to end in the black which occupies the entire Italian Tyrol, most of Dalmatia and Istria, and large portions of Bohemia and Carpathian Galicia.[1]

It is impossible to ignore the gradation of colour, the gradually increasing depth of tint from north to south exemplified in this map and shown with equal distinctness in Livi's map of Italy. There is a similar gradation in the map of the British Isles and in Topinard's map of France, but in these latter the tints deepen from north-east to south-west. This must surely be due in part to the influence of media, of sunlight and other like influences, acting probably through natural selection; social or conjugal selection seems unlikely here.[2]

But if geographical position be the warp, heredity, race, inherited type is the woof; and its threads are extremely tough and lasting. It is evidenced by the numerous and marked departures from the rule of increase of pigmentation as we go southward and south-westward.

Of these the most important and interesting is the case of the Czechs in Bohemia and Moravia. Here we have a region with masses and blotches of dark hue, yet surrounded north, south, west and east by lighter-coloured tracts.

The main facts to be considered are—

1. That this is no new thing: Ibn Fozlan, an Arabian traveller, noted, nearly 1,000 years ago, the black hair of the Bohemians. This peculiarity would hardly have struck a southron's eye, had it not been in contrast to the hair of their neighbours. And in a mediæval German publication, wherein four nations are portrayed as female figures, while Germania is blond and Italia dark, Sclavinia is represented as distinctly swarthier than Gallia. The Czechs being as it were the vanguard of Slav invasion, would very naturally be present to the mind of the artist, as the nearest and most familiar representatives of a Slavonic race.
2. The modern Mazovians and other Poles are comparatively fair, and so,

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[1] The authorities are Virchow and his coadjutors in Germany, of whom G. von Mayr was prominent in Bavaria, Schimmer in Austria, Kollmann in Switzerland, Vanderkindere in Belgium.

[2] More evidence from Russia is desirable; what we have does not afford much support to the statement above. But the movements, displacements and mixtures of the Slavish and Finnish tribes are perhaps too recent to have had their full effect in developing type.

> it is likely, were the old Obotrites of Mecklenburg and the other Wendish tribes long since swamped by German colonists, though they were not so fair as to hinder a slight degree of darkening in these same crossbred eastern Germans, as compared with the true Germanic, Saxon or Frisian stocks west of the Elbe and the Trave (the true Nordic race of Deniker); and this darkening is found on my map somewhat more distinctly than on Virchow's,[1] as it affects the hair more than the eyes.

Religious wars and persecutions have made considerable ethnic changes in Bohemia and Moravia; but the Czechs on the whole have held their ground, especially in the central plains; and the prevailing complexion may have altered less than the skull-form, which appears to have widened.

German immigration has changed the language in the mountainous borders of Bohemia, and in several towns and cantons of Moravia. The colours point to pacific infiltration, rather than colonisation *en masse* of dispeopled land; for they are almost everywhere a shade darker than that of the probable source of migration, except on the frontier of the Upper Palatinate, whence the incomers would be German in speech rather than in race.

The case of Deutsch-Brod is curious. It was originally, no doubt, a German settlement, but during the religious wars the Czechs are said to have wiped out the Germans and their language. The extermination, however, cannot have been complete, for Deutsch-Brod is to-day the most blond of all the Czech-speaking cantons. On the other hand, we find on our map Iglau and Znaim blue amid black and brown surroundings, and Brunn purple with brown surroundings, all contrary to the rule that towns develop pigment. A traveller, who went that way during the Thirty Years' War, says, that on arriving at Brünn he found the inhabitants, who had been Protestants, hanging on gibbets around the town. This atrocity may have had something to do with the present phenomena.

The dark complexion of the Czechs may have an important bearing on Slavonic origins and history. Procopius's description of the complexion of the Vends is well known.[2] Modern stocks, reckoned as Slavonic, differ much in that respect. The Slovaks of North Hungary, for example, who have a remarkably distinct type, quite different from that of the Czechs, are generally fair, with light eyes and often flaxen hair and rather lumpish features; the Mazovian Poles, too, are a rather fair race; while the Ruthenians of Eastern Gallicia, of whom we have physical statistics on adults from Mayer and Kopernicki, and on children from Schimmer, are comparatively dark. The results of Schimmer's inquiry appear in the map; those of Mayer and Kopernicki, which are practically on my plan, yield a somewhat lower index of nigrescence, but show as distinctly as Schimmer's that the Ruthenians are much darker than the Poles, and that black hair is much more frequent among them. Now this statement applies with especial force, though not exclusively, to the valleys along the northern spurs of the Carpathians, inhabited by Ruthenian tribes called Boiks and Huzuls; and the question arises whether the Czechs were a western extension or colony of these hill-men, though now, and perhaps even from the first, cut off from them by the intervening and fairer tribes of the Poles and Slovaks. There are other reasons for regarding the Carpathians as the centre of dispersion of the Slavonic stocks.

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[1] Virchow's subsidiary map of hair-colour shows it to a considerable extent, being much on the same lines as my index of nigrescence.

[2] He says the Vends were neither altogether xanthous, nor much inclined to darkness, but all somewhat reddish.

This may be the most convenient place in which to refer to Livi's theory about the mountaineers of Italy, and their relative fairness as compared with the people of the plains and the foothills. The map has not been extended to embrace any part of Italy, unless we may so call the Italian Tyrol, or those small portions of the Austrian Dominions where the Italian language disputes the mastery of German or Slavonic speech; for the whole of Italy, with the exception of two small cantons in the valley of Aosta, would come out black on my scale, the reputed blonds of the Seven and the Thirteen Communes, and of other Germanic or Slavonic villages south of the Alps, being swamped in the sea of dark-haired Italians who surround them.

Livi, however, has discovered a curious paradox respecting the mountaineers, *i.e.*, the dwellers above a line of 400 metres elevation, or about 1,300 feet. The proportion of blonds, it seems, if we take the whole of Italy into consideration, is much the same above or below this line, viz., about six per cent. Yet in every one of the 16 provinces of Italy, except the Abruzzi and perhaps Umbria, the blonds are more numerous above the 400 metre line than below it. The explanation of the paradox is simple; it depends on the facts that a large portion of the south of Italy, including Sicily and Sardinia, is covered with mountains, whereas the most populous parts of the north are level or nearly so, and that in accordance with the usual rule, the south has a much smaller proportion of blonds than the north. But to explain this increase of blonds in the mountains is not so easy. It cannot be done on grounds of historical ethnology, as Livi justly says. The rule, of course, is that conquerors seize on the fat plains, and leave the hungry mountains to the vanquished; of this we have plenty of examples in France, in Belgium, and even in England. Hence the difference in colouring between the Saxons of Wiltshire and the Britons of East Somerset. But with the exception of the Saracens, and the Aragonese, all the conquerors of Italy, from the Visigoths downwards, have been comparatively blond.

Livi is disposed to attribute the phenomenon to the poverty and insufficient nourishment of the peasants, who almost wholly constitute the mountaineer population. He regards pigmentation as in a degree an index of force. No doubt we are familiar with cases of what may be called blondness by defect; and it is not easy to give a wholly satisfactory answer to those who regard blondness as a minor degree of albinism, and point to the peculiarities of the nervous system in some light-coloured animals as an index of inferiority. Wasting and protracted illness too, diminishes the brightness and intensity of colour of the hair, though it is the oily matter, rather than the actual pigment, that is lessened.

This line of argument or rather of suggestion, may, however, easily be pushed too far. The inferiority, in respect of freedom from disease or infirmity, which Dr. Baxter, on the strength of his American-war statistics, attributed to the blond, was successfully explained away by M. de Candolle. I may return presently to this part of the subject, which is being ably followed up by Dr. Shrubsall. If it be heat more than sunlight which is pernicious to blonds in hot countries, it is quite conceivable that an elevation of over 1,300 feet in the latitude of Italy, might imply a sufficiently colder climate (say by four or five degrees Fahrenheit) to give a sensible advantage to the blonds.

To return to Austria. There is in my map, and in Schimmer's also, a long irregular band of blue running along between the northern bank of the Danube and the southern frontier of Moravia. If we suppose Austria to have been simply colonised from Bavaria, we should naturally expect it to be less, or at least, not more blond than the country whence the colonists were derived. Such is not the case, and, to add to the marvel, we find that the blond element is rather stronger in Lower or Eastern, than in Upper or Western Austria. Moreover, the Austrians are not so broad-headed as the Bavarians. Little, I think, is known about the colonisation of Austria, and one feels justified in offering a conjecture.

When the Marcomans left Bohemia for Bavaria, may not some portion of them, or perhaps rather of their allies the Quadi, have lagged behind north of the Danube (as did the Gepidæ in Hungary, and the Tetraxite Goths in the Crimea), and so formed a nucleus for the later constituted March. Others perhaps may have crossed the great river and been the first Germanic colonists of the Styrian Hills, whose people have, to my eyes, a distinctly Germanic aspect, and who are very generally blond, and often long-headed. The actual valley of the Danube, a sort of highway of nations and of armies, was in later times so frequently swept with the besom of destruction, that one cannot wonder if much of the hypothetical German population was removed by denudation, and replaced by mixed breeds, the result of perpetual chance medley. We *know*, for example, that the town of Mödling was depopulated in the Turkish wars, and that the present inhabitants are found to differ in cephalic index from all their neighbours.[1]

But the most obvious and important fact brought out by inspection of the map is the introduction of the blond element from the north, and that almost surely by way of the Kimbric or Schleswig isthmus, whence it radiated southward and westward, and later on, probably, eastward and south-eastward. Thus we find the pink colour occupying all the Frisian coasts and islands and Hannover and Oldenburg and Brunswick, down to the Harz mountains.[1] Then follow irregular rings of red and orange overspreading Westphalia and Hessia almost to the Rhine, lands which were never really conquered and settled by the Romans, but where there was only a scanty semi-German or Keltic population to be assimilated. The same colours affect the whole Prussian coast lands, except a large tract in the eastern third of Pomerania, which is coloured pink, like the opposite coast of Scania in Sweden. I might reasonably be asked to show cause for this exception. Well, firstly, some of the old Germanic or Gothic population may have remained behind at the Völkswanderung. Dr. Buschan of Stettin himself inclines to this view. 2ndly, the later Germanic colonization was probably very thorough, as the Slavonic tongue seems to have speedily faded out except in limited tracts. 3rdly, the country was long under Swedish rule, and the infiltration of Swedes *may* have been of some importance, though that is rather unlikely. I have already said that there are and doubtless were great differences of this kind among the various Slav-speaking tribes; and these old Pomeranian people may have been as fair as the Letts or Lithuanians, and fairer than the Mazovian Poles, the admixture of whom does somewhat darken the shades on the Polish and Silesian frontiers. The still Slav-speaking Cassubians, too, just to the east of the tract in question, are moderately blond (red on my map). But it may be of greater interest to trace the westward and southward track of the immigration of the Nordic race of Deniker.

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[1] Zuckerkandl.

Of coloration in Holland we unfortunately know very little accurately. Except my own, and those of the veteran De Man of Middelburg in Walcheren, there are no systematic observations on the subject with which I am acquainted; and these two series are confined to the coasts.[2] But Friesland and North Holland are extremely blond, as much so as any part of North Germany, while Zealand, strange to say, nourishes a mostly brachycephalic people highly pigmented, and insular in more than one respect: for the blond or xanthous tide, though by now somewhat enfeebled, crosses the Rhine, the Waal, and the Maas, and overspreads conspicuously almost the whole of Limburg, Brabant, and Flanders. Here we come upon perhaps the most interesting of colour-frontiers in Europe, which is at the same time a frontier of race and of language. I have expressed regret that Vanderkindere struck out a colour scheme of his own for Belgium; it has its merits, but its results cannot with any confidence be compared with either Virchow's, or Topinard's, or mine. I have endeavoured to do so in the map, but with dubious success. But whatever plan might be adopted to display Vanderkindere's statistics, it could not fail to exhibit more or less distinctly, the features of this wonderful frontier. If we draw a line due west across Belgium from Aix-la-Chapelle, leaving Tongern, Tirlemont, Brussels, Oudenarde, and Kortryk on the right or north, and Liege,

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[1] In Schleswig (Hadersleben and Tondern, and in less degree Husum and the two Dithmarschen, *i.e.*, among the Danes and Frisians), blue eyes are very much in evidence, but I am not sure that we can generalize on the fact. The people of Denmark are not homogeneous. The Saxons and Frisians differ in feature more than in complexion.

[2] They were made upon adults, but I have reduced them by 50 degrees to bring them into line with the children.

Wavre, Grammont on the south, it will be seen that every province north of this line is coloured green or blue, while every one to the south is purple or brown. Ypern has, north of the line, two French-speaking cantons; if they were withdrawn from it, they would come out purple. And if we divided the provinces into cantons, the line of coloration would continue fairly straight and sharp, and few spots of colour would anywhere appear on the wrong side of the line. On the north of it the folk speak Flemish, on the south Walloon, and Houzé has shown that on the north they are dolichocephalic and tall, on the south brachycephalic and lower in stature. Here it is the hill folk who are darker, not as in Italy; but the hills have to do with the phenomenon only in an indirect way, for Hainault, the most westerly Walloon province, though flat, is the darkest and shortest. It is clearly an affair of race; the hills and woods of the Ardennes, and in a less degree of the Eifel, simply turned aside the currents of conquest and migration, and directed them westward and southward. Holland was possessed by the blond from time immemorial, but Flanders and Brabant probably only from the period of Frank and Saxon immigration. When and whence came the little island of brachycephalic and comparatively dark population which occupies most of Zealand is as yet a mystery. Dr. De Man, who knows most about it, says that it was not indigenous, and was preceded in Walcheren by a long-headed type.

Nowhere in Thuringia is the blond German race very pure, but it is more so in the west than in the east, where there are Slavonic settlements that slightly darken the colour; that such is the case is proven not only by historical and place-name evidence, but by a broadening of the head and a lowering of the stature, even where the land is exceptionally fertile. Similarly the continual darkening as we push southwards through the hills and across the Main, the Danube, and the Rhine, can be quite accounted for without calling in the help of altered climate. Mean temperature indeed increases very little as we travel, but sunlight certainly does, and may have a slight influence. But race-migrations are a sufficient explanation of the phenomena.

When the Allemans broke through the Heidenmauer and spread themselves over Swabia, they were still a long-headed and probably a very blond race; but they doubtless brought alien serfs in their train, and certainly the further they extended their conquests the more serfs they acquired, until these latter may have even constituted the bulk of the population, with them as with the Bavarians. Their way lay at first through the modern Wurtemberg, which is green and yellow on the map; while Baden, subsequently occupied, comes out blue, and Switzerland and Elsass, later acquisitions, are darker still. In Bavaria and the German Tyrol, the invaders must have been weaker in numbers proportionally, though still strong enough to impose their language, hence the darker colouring there. The frontiers had to be guarded by the military caste; hence perhaps the suggestions of something Lombardic, almost English, in the aspect of the people of Ticino, and of something very German in some remote Tyrolese valleys. The invasion of Switzerland would naturally take place through the gap where the combined Aar, Reuss, and Limmat make their way to the Rhine. Accordingly my map shows the Aargau as blue, with a good proportion of blonds, which dwindles away as we follow the probably radiating tracks of the invaders. The peculiar lightness of Unterwalden reminds one of the traditions about the Scandinavian origin of its people, but is really due in the main to some palpable errors of the observers, which caused Virchow and Kollmann to put this most interesting little canton at the bottom of the list as regards the blond type, and cause me to put it at the top. It is actually rather blond, for Switzerland.

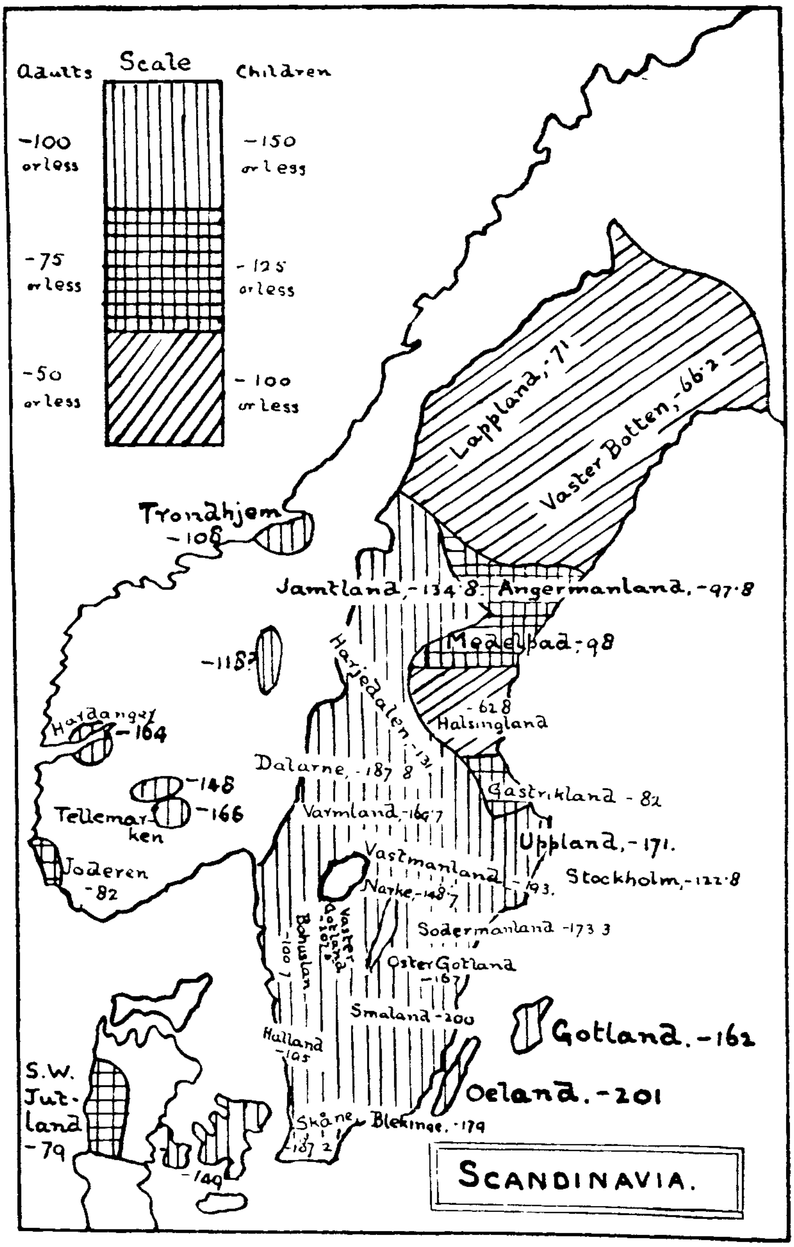

FIG. 1.

Geneva's position is also remarkable, and much could be said about it, but space fails for its discussion.

The small map of Scandinavia (Fig. 1) has been constructed from the figures of Gustav Retzius and Fürst, for Sweden, of Arbo for Norway, and of Sören-Hansen and Westergaard for Denmark. These last, as I have already said, are exactly on my plan, and therefore very comparable with those for the British Isles. The want of a niche for black hair in Norway (where, however, it scarcely occurs) and the absence of one for medium brown (châtain clair) in Sweden, very slightly impair the comparison by giving the index of nigrescence a little twist to the light side; but this is of no material consequence; the order of the different countries is unaffected by it. My scheme of coloration makes me class the greater part of this region with the very fair north-west of Germany. But if there were another shade of colour which I could prefix to pink on the scale, something more pink than pink itself, to indicate extreme fairness, it would have to be used for at least the central and western parts of Sweden and some districts of Norway. The darkening of the north-eastern parts of Sweden, of Lapland, Westbothnia, Angermanland and Helsingland, must be due partly at least to the admixture of Lappish and Finnish blood; for though the Tavastian Finns, crossed a little perhaps with Swedish strains, are generally fair, there is certainly an underlying strain of the brunet among them. But it is not for nothing that the Lapps lie north of the Swedes and the Tavastians, and the dark Samoyedes north of the parti-coloured or reddish Ostiaks, Voguls and Votiaks. There must surely always have been something in the climatic conditions of central and southern Scandinavia propitious to the blond type, and comparatively unfavourable to the brown, which held its own and flourished to both north and south—conditions which, by natural selection, perpetuated, if they did not evolve, the blond, which nowadays at least seems to persist in southern Europe only by constant reinforcement from the north. There is no reason that I am aware of to think that the brunet type gains in Scandinavia, though the growth of towns in Norway may bring about that effect. One cannot read the old Sagas without knowing that there was considerable variety of complexion in Ireland and Norway in the olden days, probably quite as much as there is now.

We may now turn to the map of the British Isles (Plate XVII), in which, as in that of Scandinavia, an allowance of 50 degrees is made for the difference between adults and schoolchildren.

The inquiries of Virchow, Von Mayr, Schimmer, Kollmann, and Vanderkindere as to children, and of Livi, Retzius and Fürst as to conscripts, covered the entire ground of their respective countries; mine of course could not do so; but every spot on the map indicates a locality where I have inspected the inhabitants, or rather the adults encountered there. The only exceptions are, seven in West Connaught and its islands, two in Donegal, one in Kerry, one in Clare, and one in co Wexford, all worked by Dr. C. Browne, to whose great kindness I owe the ability to use the data of five localities, the schedules of which are yet unpublished; and eight in Great Britain, viz., Sutherland by Dr. Christison, Youlgrave in Derbyshire by Barnard Davis, Flamborough by General Pitt-Rivers, Barley, S. Cambs. by Haddon and Grunbaum—all these are exactly on my lines—the district of Buchan by Gray, Cullen and its fishers by Smith and Gardiner, and Luirbost in the Lewis by Macleay.

The square spots indicate townsfolk, the circular country-folk, so far as they could be distinguished.

The connexion between colour and climate or latitude is not so well marked in Britain as in Germany, though there is a distinct darkening as we proceed from north-east to south-west, *i.e.*, from the colder to the warmer parts of the islands, and from the region of dryness and of extremes to that of moisture and mildness.

But we really have little or no need here to invoke the influence of climate, seeing that almost all the phenomena can be accounted for by historical facts or probabilities—in a general way, by the successive intrusions of tribes or races believed to have been mostly of light complexion, arriving from the north and east, the prior inhabitants having been, to judge from their supposed descendants and from indications in the old Irish literature, more usually dark.

It is not practicable on this occasion to go into many details; but I would like to point out some cases in which the aspect of the map confirms or explains doubtful points in history, and some perhaps in which, after all, we must be left in doubt. Questions of heredity and environment, the latter working usually, we believe, by natural selection, and embracing among other elements elevation, climate in general, occupation, urbanisation, all come out on a survey of the maps.

Thus we may note the comparatively dark hues of the district of Strathnaver in Sutherland. The Mackays or their ancestors, whom Mr. McRitchie would doubtless claim as Pictish, held a difficult country without good harbours; hence probably the comparative absence of the lighter colours which appear wherever the Norsemen intromitted, over the greater part of the Northern Highland country. We have but scanty particulars respecting the peopling of the Eastern Lowlands, from the Forth and Tay to the Findhorn, with English-speaking people. We know something about the captains of the colonisation, but little about the rank and file. They were of mixed nationality; and the English tongue, though it finally prevailed, may perhaps not have been that of the majority. I think the Flemings may possibly even have been the strongest element, and it may be noticed that the colours come out on my map rather like those of Flanders and the Lower Rhine. In certain districts, the persistence of the indigenæ is revealed by the comparative lightness of the eye, compared with the hair, a characteristic, one of several, in which the so-called Celts and Slavs generally agree. Observe the variety of colour in and about Edinburgh. The Anglo-Scandian fisherfolk and the Lothian farmers are represented by the orange spots, the almost equally blond denizens of the small surrounding towns appear yellow, the citizens in general green, and the dark-haired semi-Celts of the Canongate slums are blue.

The remarkable fairness of the population of the Borders is of interest from several points of view. It is not so clearly marked about the centre of the border line, as it is near either extremity, *i.e.*, near to either Berwick or Carlisle. In the eastern Marches we have the nearly pure Anglian, in the western, the comparatively pure Norseman; in the centre, the Brythonic or, more correctly, the pre-Saxon population has to some extent held its ground.

If we have a mountaineer population anywhere in this low-level land of Great Britain, it is surely at Wanlockhead and Leadhills, well over 1,000 feet above sea-level; and it is clearly blond. Other elevated districts, Braemar, Moffatdale, and above all, Upper Teesdale and the Peak, all come out very fair. The Braemar folk may be descended from Tacitus's "rutilous" Caledonians; and I myself believe the people of the Peak to be very Anglian, in spite of the Keltic place-names thereabout. Still there is something suspicious in the fact that all these high-level people (they are not exactly hillmen) come out so fair—can it be some form of selection at work in a cool and moist climate, such a habitat as seems to be highly congenial to the blond?

The lightness of the Cumberland and Westmorland folk may perhaps be entirely racial; it affects both hill and dale.

Notable points further south are the darker shades found in the centre and south-east Midlands, tracts where we know nothing of any Anglian colonisation, except what the language and place-names tell us, and which are remote from the harbours and great rivers by which such colonisation must have taken place. Stratford-on-Avon and Heyford in Northants are good examples; the numbers at Rugby are too small for dependence. On the other hand, the valley of the Trent, which we know to have had, in early days, a large fighting, *i.e.*, Anglian population, exhibits quite light coloration. Stourport, a town of recent origin, owes its yellow colour, which does not reappear west of the Severn, to a colony from Staffordshire —Yarmouth was full of Londoners when I was there. Braintree in Essex owes its dark colour, I believe, to an old Huguenot colony of silk-weavers.

In the south, Horsham and Ashford, by their darker colours, support the opinion that the Britons of Kent and Sussex, during the English conquest, found a refuge in the forest of the Weald, while the lighter colours of Hampshire, Berkshire, East Wilts and the Cotswolds, testify the strength of the invading population which is supposed to have landed about Portsmouth and Southampton Water.

In South Devon, we know that the Cornish tongue survived into the middle ages; accordingly, the folk are dark in colour like the Welsh and Cornish, as Huxley himself noticed. But there are islands of Saxonry in Devon, especially near harbours, in some cases, I doubt not, of very early settlement, side by side with old British holdings, so that the two races must have lived peaceably within sight of each other. I do not believe the wars of those old days were always so sanguinary as we are led to suppose.

The "barbarous" Saxons were not so cruel as the civilized Romans, who gave them that evil reputation. The Saxons fought for plough-land, the Romans for dominion, booty, and slaves, the Germans of the dark ages for slaves; we fight for trade and commerce; there is no such great difference.

Dark eyes and dark hair are as prevalent in Wales as Radicalism or Nonconformity. There seem to me to be at least two dark stocks, one more like the Irish, tall, grey-eyed and dark-haired, the other shorter with dark almond-shaped eyes, and brown-haired. Someone working on the lines of D. Mackintosh might disentangle these and some other strains. It will be noted that only the part-Flemish populations of S. Pembrokeshire and S. Glamorgan are fair enough for the blue colour. Of the black spots Llandaff may be due to accident or selection, Dinas Mawddwy is remote among the mountains; the colour at Carmarthen Eisteddfod would be partly due to selection by temperament, it being more of a musical gathering than anything else. It is curious that though red hair is more frequent in Wales than in England, the Welsh called the Normans who conquered and annexed Brecon "red-haired people."

The distribution of colour in Ireland is equally interesting with that in the sister island; but there is little space for its discussion. On the whole the natives of the east of Ireland, the descendants of the later invaders, the upper classes, the people with English or Scottish surnames, tend to fairness—the natives of the west, the indigenæ, the labourers and peasants, the people with Keltic surnames, are darker, at least in hair colour.

The band of spots of lighter hue running across from eastern Clare through Limerick and Tipperary to Waterford and Wexford, is worthy of study. The strong Norse colonies of Limerick,[1] Waterford and Wexford have something to do with it; but they doubtless did not constitute the earliest blond settlement, as they were not the latest. The whole tract is rich, fertile and tempting to a conqueror.

In Dr. Browne's amphibious or littoral populations, as in mine, red or light hair generally occurs in large proportions, though General Pitt-Rivers' Flamborough fishermen, in whom black is very common, are a contrary instance.[2] Such communities often have the reputation of being foreign colonies, but the surnames seldom support this belief. Some general characters apply to most of Dr. Browne's islanders, especially the length of face, a characteristic of which the old Gael used to be proud, and the extreme rarity of brown eyes, which can be equalled only in Sweden; but in each island taken separately there is a greater general resemblance, as though the peculiarities of prepotent individuals may have had more chance of being perpetuated, from absence of crossing, than would have been the case elsewhere. Does exposure to a marine atmosphere favour the production of orange colouring matter? Or has there been a selection of the bold, the adventurous, the sharp-sighted, which has been advantageous to the blue-eyed?

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[1] It is said, no doubt with much of the usual Irish hyperbole, that after the sack of Limerick there was not a house in Munster wherein there was not a foreign (captive) woman grinding at the handmill.

[2] Note particularly, among Dr. Browne's lists, the people of Inishmaen (Aran) Garumna, Clare Island, and Malin Head, and among mine, those of the Claddagh, of Geileen and of Inishmurray—also in England, the fishers and boatmen of Plymouth, Dover, Yarmouth and Whitby, and in Scotland, of several fishing stations on the east coast.

I have said nothing about the theory of temperaments, nor about the supposed connection between them and complexional colours. That there was a basis of truth beneath the ancient doctrine no careful observer can doubt. Thus in lunatic asylums one sees the victim of mania usually with sanguine traits, the melancholic and the insane epileptic most often with straight dark hair. Persons of highly nervous temperament, thought-readers, seers, prophets, are mostly either very black or extremely fair. Note too the preponderance among criminals of dark hair, and yet more clearly of the brown eye (the criminal eye as some have called it) most marked, according to my own statistics, in crimes of violence. We must regret that, from ill-judged governmental parsimony, Dr. Garson is no longer in a position to study this subject to advantage; but from him and from Dr. Shrubsall I hope for further light upon it, or perhaps from Mr. Havelock Ellis's investigations into the relations between complexion and distinction in various walks of life. We must, of course, allow a great deal for possible differences in nomenclature. For example, I do not doubt that Flavus, in the mouth of a Roman, included my medium brown, the French light-chestnut, as Livi's blond category or De Aranzadi's Rubio seemingly does at present; still it is difficult to suppose that the classic authors would have assigned reddish hair to the sanguine, light to the lymphatic, unless the colours they described under those names had been tolerably frequent among the Mediterranean folk, which is not now the case, notwithstanding the great amount of northern blood which has been poured in the southern peninsulas of Europe since their day. The great extent but slow rate of the change may be studied in Woltmann's recent book.[1]

Is a similar change going on among ourselves? The long duration of my observations has not enabled me to be quite certain on the point; but I believe it, as many others. And I regret the diminution of the old blond lympho-sanguine stock, which has hitherto served England well in many ways, but is apparently doomed to give way to a darker and more mobile type, largely the offspring of the proletariat, and more adapted to the atmosphere of great cities. The higher types of Scotchmen in particular, confessedly the dominant breeds of our islands, are being rapidly expended in the service of the empire, or are melting away in the fatal atmosphere of great cities. Will the coming race be able to retain what these men have died to win?

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[1] *Die Germanen und die Renaissance in Italien.*

TABLE OF ORDER OF BLONDNESS OF THE PROVINCES OF PRUSSIA.

	By Proportion of Pure Blond. (Virchow.) I.	By subtracting blond from brown type of Virchow. II.	By blue eyes children of 12 years and over. III.	By blond hair in all combinations. IV.	Do. in children over 14. V.
1	Sleswig	Sleswig	Sleswig	Sleswig	Hannover.
2	Pommern	Pommern	Hannover	Hannover	Sleswig.
3	Hannover	Hannover	Westphal.	Pommern	Westph.
4	Prussia	Prussia	Pommern	Westphal.	Saxony.
5	Westphalia	Westphalia	Saxony	Prussia	Pommern.
6	Saxony (prov.)	Brandenburg	Prussia	Saxony	Prussia.
7	Posen	Posen	Brandenb.	Brandenb.	Brandenb.
8	Brandenburg	Saxony	Rhineland	Hesse-N.	Rhineland.
9	Hesse-Nassau	Hesse-N.	Posen	Rhineland	Hesse-N.
10	Rhineland	Rhineland	Hesse N.	Posen	Posen.
11	Silesia	Silesia	Silesia	Silesia	Silesia.

The eastern provinces fall, and the western and more purely German ones rise in order of blondness as the children increase in age. Comparing columns I and V, the six western provinces rise from a mean rank of 5·6 to one of 4·5; the eastern, Slav or Slavonised German provinces fall from 6·4 to 7·8.

TABLE OF PIGMENTATION. CENTRAL EUROPE.

Formula $\overbrace{2\,(\text{Dark} + 2\text{ Black} - \text{Red} - \text{Fair})}^{\text{Hair}} + \overbrace{(\text{Dark} - \text{Light})}^{\text{Eyes}}$

East Prussia.	
Gumbinnen	(−122)
Johannesburg	−89
Lyck	−94
Gumbinnen	−105
Sensburg	−109
Tilsit	−109
Lötzen	−114
Insterburg	−128
Angerburg	−129
Goldap	−129
Oletzko	−130
Darkehmen	−133
Ragnit	−133
Stallupönen	−136
Heydekrug	−140
Gumbinnen (*contd.*)—	
Pilkallen	−146
Niederung	−149
Königsberg	(−127)
Königsberg City	— 93
Allenstein	−110
Rastenburg	114
Königsbergland	120
Osterode	121
Wehlau	121
Memel	122
Neidenburg	124
Ortelsburg	125
Gerdauen	129
Rossel	130
Braunsberg	133
Mohrungen	135
Königsberg (*contd.*)—	
Pr. Eylau	135
Heibigenbeil	136
Heilsberg	139
Friedland	141
Labiau	141
Fischhausen	142
Holland	148
West Prussia.	
Danzig	(−123)
Danzig	−91
Elbing	105
Berent	113
Stargard	118
Marienburg	121
Danzigland	130

Danzig (*contd.*)—

Karthaus	131
Neustadt	132
Elbingland	157
Marienwerder	(−113)
Thorn	−80
Kulm	92
Strasburg	93
Graudenz	99
Schwetz	99
Löbau	104
Marienwdr	113
Konitz	118
Stuhm	122
Flatau	128
Rosenburg	132
Deutsch Krone	136
Schlochau	143

Posen Province (−91).

Bromberg	(−93)
Mogilno	−57
Gnesen	77
Inowraslaw	82
Bromberg	86
Kolmar	104
Wirsitz	107
Czarnikow	110
Wengrowitz	119
Schubin	123

Posen.

Posen	(−88)
Posen City	−55
Pleschen	70
Fraustadt	71
Krotoschin	73
Wreschen	80
Samter	80
Schildberg	81
Kröben	87
Schrimm	89
Kosten	89

Posen (*contd.*)—

Adelnau	90
Posenland	98
Birnbaum	98
Bomst	100
Schroda	102
Buk	107
Meseritz	117
Obornik	122

Pomerania.

Stralsund	(−127)
Stralsund City	−101
Franzburg	118
Rügen	121
Greifswald	128
Grimmen	130
Stettin	(−121)
Stettin	−70
Greiffenhagen	91
Pyritz	103
Saatzig	117
Uckermünde	119
Kammin	120
Randow	123
Anklam	126
Greifenberg	130
Naugard	134
Usedom	136
Demmin	139
Regenwalde	144
Köslin	(−156)
Stolp	−135
Lauenburg	141
Bütow	148
Kolberg	154
Bublitz	155
Dramburg	158
Rummelsburg	159
Köslin	159
Schlawe	161
Neustettin	172
Schivelbein	180

Brandenburg.

Frankfort-on-Oder	(−114)
Kalau	−95
Krossen	100
Frankfort	101
Sorau	107
Zullichau	109
Königsberg	113
Friedeburg	114
Kottbus	114
Lebus	115
Lubben	116
Luckau	117
Landsberg	117
Soldin	117
W. Sternberg	119
Spremberg	123
E. Sternberg	127
Arnswalde	132
Guben	132
Berlin	−78
Potsdam	(−121)
Potsdam	−96
Teltow	112
Brandenburg	113
Templin	115
Zauche-Belzig	115
Oberbarnim	116
Ruppin	116
Angermünde	117
E. Havelland	117
Niederbarnim	117
Pranzlau	121
Suterbog	130
W. Havelland	136
Beeskow	140
E. Priegnitz	143
W. Priegnitz	145

Silesia.

Liegnitz	(—81)
Liegnitz City	—38
Landshut	65
Hoyersverda	67
Leignitzland	68
Hirschberg	73
Gorlitz	73
Grunberg	75
Jauer	75
Löwenberg	76
Goldberg H.	79
Freistadt	80
Sagau	83
Schonau	86
Lüben	89
Rothenburg	89
Bunzlau	90
Sprottau	94
Glogau	94
Bolkenhaïn	94
Lauben	97
Breslau	(—79)
Breslau City	—49
Neurode	68
Glatz	71
Striegau	71
Wartemberg	72
Trebnitz	73
Gehrau	77
Schweidnitz	77
Breslauland	78
Militsch	79
Habelschwert	79
Brieg	79
Waldenburg	80
Neumarkt	81
Strehlen	84
Reichenbach	85
Frankenstein	87

Breslau (*contd.*)—	
Münsterberg	90
Ohlau	91
Oels	92
Steinau	98
Wohlau	102
Nimpch	112
Namslau	121
Oppeln	(—60)
Rybnik	—30
Pless	32
Kattowitz	41
Tostgleiwitz	52
Strehlitz	53
Beuthen	58
Ratibor	58
Zabrze	60
Kreutzberg	64
Oppeln	64
Lublinitz	65
Kosel	69
Leobschütz	71
Neisse	72
Falkenberg	72
Tarnowitz	74
Neustadt	74
Rosenberg	85
Grottkow	94
Schleswig	(—156)
Altona	—133
Rendsburg	143
Schleswig	147
Oldenburg	151
Pinneburg	151
Stormarn	151
Eiderstedt	151
Kiel	152
Lauenburg	152
Eckernförde	153
Steinburg	153
Segeberg	158

Schleswig (*contd.*)—	
Apenrade	158
Sonderburg	161
Plön	163
Flensborg	164
Tondern	172
2 Dithmarshen	173
Husum	173
Hadersleben	176
6 Frisian Isles (Virchow)	183[1]

Pruss. Saxony.

Magdeburg	(—134)
—Wernigerode	96
Magdeburg	110
Jerichow I.	118
Aschersleben	123
Kalbe	126
Osterburg	129
Halberstadt	131
Stendal	137
Jerichow II.	138
Wohlmirstadt	143
Oschersleben	148
Salzwedel	148
Neuhaldensleben	149
Wanzleben	150
Gardelegen	156
Merseburg	(—105)
—Zeitz	83
Weissenfels	83
Naumburg	89
Sangershausen	92
Wittemberg	95
Querfurt	97
Liebenwerda	105
Eckartsberga	105
Delitsch	105
Merseburg	109
Torgau	110

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[1] Everything over 170 is wholly or partly Danish or Frisian.

Merseburg (*contd.*)—	
Bitterfeld	110
Saalkreis	115
2 Mansfelds	117
Schweinitz	121
Halle	125
Erfurt	(−91)
−Weissensee	57
Erfurt City	61
Ziegenrück	69
Shleusingen	72
Mühlhausen	84
Nordhausen	95
Langensalza	101
Heiligenstadt	109
Erfurtland	113
Werbis	119
Hannover	(−139)
Wennigsen	−120
Hannover City	123
Hameln	127
Hannoverland	148
Hoya	150
Nienburg	150
Diepholz	158
Stade	(−169)
Verden	−149
Marshkreis	157
Geestkreis	163
Rothenburg	171
Neuhaus	172
Osterholz	176
Lehe	182
Otterndorf	186
Lüneburg	(−159)
Celle	−150
Lüneburg	152
Dannenburg	154
Gifhorn	155
Uelzen	157
Fallingbostel	168
Harburg	172

Osnabrück	(−134)
Meppen	−122
Lingen	130
Melle	137
Osnabrück	139
Bersenbrück	144
Aurich	(−160)
Leer	−153
Aurich	164
Emden	166
Hildesheim	(−123)
Liebenburg	−113
Marienburg	114
Osterode	119
Einbeck	120
Göttingen	121
Zellerfeld	122
Hildesheim	149
Westphalia	(−129)
Münster	(−128)
Kösfeld	−97
Ludwigshausen	98
Recklinghausen	198
Borken	121
Münster City	127
Steinfurt	131
Beckum	141
Ahaus	143
Warendorf	145
Tecklenburg	148
Münsterland	158
Minden	(−134)
Paderborn	−99
Büren	107
Warburg	107
Höxter	113
Minden	142
Lübbecke	143
Halle	147
Wiedenbruck	150
Herford	153
Bielefeld	158

Arnsberg	(−126)
Brilon	−108
Iserlohn	111
Lippstadt	119
Olpe	121
Altena	121
Hagen	122
Meschede	122
Arnsberg	123
Bochum	127
Dortmund	129
Soest	133
Siegen	133
Wittgenstein	134
Hamm	142
Hessenassau	(−96)
Wiesbaden	(−90)
Frankfurt-o-M.	−62
Rheingau	62
Wiesbadenland	78
Untertaunus	81
Unterlahn	84
Obertaunus	94
Unterwesterwald	95
Wiesbaden City	97
Oberlahn	106
Biedenkopf	114
Oberwesterwald	116
Dillkreis	121
Cassel	(−101)
Hanau	−64
Schmalkalden	75
Cassel City	83
Schlüchtern	83
Hünfeld	87
Ziegenhain	−92
Hersfeld	94
Melsungen	97
Hofgeismar	99
Homberg	101
Gersfeld	101
Gelnhausen	106
Rothenburg	106

Cassel (*contd.*)—	
Fritzlar	108
Cassel Land	110
Eschwege	111
Fulda	116
Witzenhaus	117
Kirchhain	118
Wolfhagen	120
Marburg	124
Frankenberg	125
Rinteln	147
Rhineland	(–75)
Düsseldorf (right bank).	
Düsseldorf City	–74
Düsseldorfland	85
Barmen	92
Mülheim	99
Mettman	100
Elberfeld	102
Essen City	106
Essenland	113
Rees	115
Solingen	120
Lennep	131
Left bank.	
Neuss	–58
Kemper	82
Cleve	83
Grevenbrai	85
Geldern	95
Gladbach	99
Mörs	104
Köln (right bank).	
Siegkreis	–98
Gummersbach	101
Wipperfürth	104
Waldbröl	112
Mülheim	123
Left bank.	
Köln City	–55
Bonn	66
Euskirchen	74
Kölnland	75
Left bank (*contd.*)—	
Rheinbach	75
Bergheim	77
Koblenz (right bank).	
Neuwied	–94
Wetzlar	101
Altenkirchen	119
Left bank.	
Koblenz	–54
Kochem	55
Mayen	60
Kreuznach	63
Ahrweiler	66
St. Goar	71
Meisenheim	86
Zell	89
Adenau	89
Aachen	(–58)
Aachen City	–28
Aachenland	43
Eupen	45
Jülich	46
Geilenkirchen	53
Schleiden	69
Montjoie	70
Malmedy	72
Hersberg	73
Düren	75
Erkelenz	92
Trier	(+45)
Trier City	–11
Saarburg	12
Merzig	30
Trierland	33
Saarlouis	43
Bitburg	44
St. Wendel	47
Saarbrücken	49
Berncastel	52
Ottweiler	53
Wittlich	60
Daun	61
Prüm	75
Hohenzollern.	
Sigmaringen	–31
Rest of H.	45
Mecklenburg Sch.	(–130)
Ludwigslust	–112
Wismar	114
Hagenaw	120
Waren	122
Schwerin	126
Güstrow	127
Parchim	128
Malchin	133
Rostock	134
Doberan	140
Gravesmühlen	145
Ribnitz	146
N. Strelitz	(–128)
Neustrelitz	–118
Neubrandenburg	125
Schönberg	163
Lubeck City	–129
L. Principality	–155
Bremen	–146
Brunswick	(–151)
Braunschweig	–156
Wolfenbüttel	147
Gandersheim }	148
Holzminden }	
Helmstedt	150
Blankenburg	157
Lippe.	
Detmold	–101
Schaumburg	–125
Waldeck	–129
Anhalt	(–118)
Ballenstadt	–111
Dessau, Kothen, Zerbst	122
Bernburg	139
Oldenburg	(–172)
Vechta	–136
Friesoythe	140

Oldenburg (contd.)—	
Löningen	157
Berne	160
Elsfleth	163
Damme	166
Brake Ovelgonne	171
Westerstede	171
Jever	176
Delmenhorst	176
Varel	177
Oldenburg	178
Kloppenburg	188
Stoltham	194
Wildeshausen	197
Birkenfeld	—51
Coburg-Gotha.	
Gotha	—51
Coburg	94
Saxe-Weimar-Eisenach	(—82)
Weimar	—76·7
Neustadt	80
Eisenach	87
Dermbach	96
Saxe-Meinengen	(—68·5)
Sonneberg	—61
Hildburghausen	66
Saalfeld	73
Meiningen	74
S. Altenburg	—46
Reuss.	
Elder (Greiz, etc.)	—40
Younger (Gera, etc.)	72
Saxony	(—85)
Zittau	—97
Döbeln	96
Meissen	95
Glauchau	93
Grimma	90
Leipzig	88
Saxony (contd.)—	
Freiberg	86
Annaberg	86
Zwickau	84
Dresden	82
Bautzen	82
Pirna	80
Plauen	78
Chemnitz	76
Rochlitz	69
Schwarzburg.	
S. Sondershausen (Upper)	—41
Ditto. (Lower)	65
S. Rudolstadt (Upper)	—110
Ditto. (Lower)	134
Hesse.	
Oberhessen	(—84)
Budingen	—66
Giessen	75
Friedberg	81
Alsfeld	82
Lauterbach	93
Schotten	110
Starkenburg	(—53)
Benzheim	—39
Dieburg	41
Gr. Gerau	48
Offenbach	55
Erbach	55
Darmstadt	66
Heppenheim	68
Rheinhessen	(—53)
Worms	—49
Oppenheim	53
Mainz	54
Alzey	58
Bingen	61
Bavaria	(—7)
Pfalz	(—11)
Bavaria (contd.)—	
Speyer	+3
Landau	1
Bergzabern	—3
Zweibrücken	—4
Kaiserslautern	10
Pirmasens	14
Frankenthal	16
Kirchheim	16
Neustadt	16
Germersheim	17
Kusel	22
Homburg	23
Lower Franconia	(—40)
Kitzingen	—10
Aschaffenburg	18
Wurzburg	20
Gerolzhofen	27
Ochsenfurt	31
Karlstadt	38
Melrichstadt	39
Königshofen	41
Alzenau	44
Lohr	45
Hassfurt	48
Kissingen	49
Ebern	52
Obernburg	53
Miltenberg	55
Hammelburg	55
Schweinfurt	55
Marktheidenfeld	57
Bruckenau	69
Neustadt	72
Middle Franconia	(—9)
Eichstadt	+25
Hersbruck	+9
Nürnberg	+2
Fürth	—0·2
Beilngries	—1
Ansbach	7
Schwabach	9
Heilsbronn	10

Middle Franconia (*contd.*)—	
Offenheim	12
Weissenburg	15
Dinkelsbühl	17
Neustadt	21
Gunzenhausen	24
Erlangen	25
Feuchtwangen	26
Scheinfeld	27
Rothenburg-a-T.	33
Upper Franconia	(−33)
Bamberg I.	−5
Bamberg II.	16
Kranach	22
Forchheim	24
Steinach	26
Hof	28
Lichtenfels	29
Hochstadt	31
Bayreuth	33
Berneck	36
Pegnitz	37
Staffelstein	37
Münchberg	40
Rehau	43
Kulmbach	46
Ebermanstadt	51
Teuschnitz	54
Wunsiedel	62
Swabia	(+ 4)
Wertingen	+ 24
Dillingen	23
Augsburg	19
Memmingen	16
Donauworth	13
Kaufbeuren	11
Nördlingen	11
Sonthofen	4
Krumbach	3
Kempten	+ 1
Neuburg	− 0·6
Lindau	− 6
Swabia (*contd.*)—	
Mindelheim	9
Gunzburg	11
Fussen	16
Illertissen	29
Neu Ulm	31
Zozmarshausen	37
Oberdorf	45
Oberpfalz	(+ 7)
Roding	+ 37
St. am Hof	29
Regensburg	26
Neumarkt	21
Burglengenfeld	19
Hamau	19
Sulzbach	18
Amberg	15
Cham	9
Tirschenreuth	+ 7
Eschenbach	− 4
Vohenstrauss	4
Velburg	4
Waldmunchen	5
Nabburg	7
Neustad	15
Neunburg	20
Kemnath	42
Upper Bavaria	(+ 20)
Aichach	+ 64
Erding	58
Berchtesgaden	47
Miesbach	42
Brück	35
Traunstein	33
München L^t	32
Rosenheim	31
Weilheim	26
München R^t	25
Schongau	25
Laufen	24
Muhldorf	24
Altötting	22
Ingolstadt	21
Upper Bavaria (*contd.*)—	
Freising	20
Ebersburg	14
Dachau	12
Landsberg	8
Pfaffenhofen	5
Tölz	+ 4
Friedburg	− 1
Schrobenhausen	3
Werdenfels	6
Wasserburg	8
Munchen City	+ 25
Lower Bavaria	(+35)
Landau	+ 84
Wegscheid	65
Straubing	50
Deggendorf	48
Eggenfelden	43
Pfaffkirchen	43
Kötzting	40
Landshut	40
Vilsbiburg	36
Passau	36
Griesbach	30
Bogen	28
Grafenau	28
Viechtach	27
Regen	24
Wolfstein	24
Vilshofen	23
Mellersdorf	22
Rottenburg	21
Kolheim	9
Dingolfing	7
Alsace	(+ 32)
Rappoldsweiler	+ 75
Schletstadt	+ 53
Gebweiler	+ 45
Erstein	+ 45
Mulhausen	43
Thann	42
Strasburg	30
Kolmar	29

Alsace (*contd.*)—	
Molsheim	25
Hagenau	16
Altkirch	15
Weissenburg	14
Strasburgland	12
Zabern	+ 7
Lorraine	(+ 26)
Saarburg	45
Saargemünd	45
Metzland	30
Salzburg	27
Diedenhofen	26
Bolchen	21
Forbach	− 3
Metz city	− 21
Baden	(− 29)
Karlsruhe	− 17
Mannheim Freiburg	− 17
Waldshut	23
Baden	24
Lörrach	24
Offenburg	26
Konstanz	28
Villingen	31
Heidelberg	37
Mosbach	38
Württemberg	(− 42)
Jaxt	(− 46)
Hall	− 18
Scharndorf	26
Neresheim	27
Elwangen	30
Crailsheim	31
Aalen	39
Walzheim	41
Guildorf	49
Gmünd	49
Heiderheim	53
Gerabronn	55
Mergentheim	58
Kunselsau	69
Württemberg (*contd.*)—	
Oehringen	75
Neckar	(− 45)
Neckarsulm	−27
Stuttgart city	28
Heilbronn	30
Esslingen	30
Canstatt	32
Ludwigsburg	39
Stuttgartland	41
Leonberg	44
Bachnang	50
Vaihingen	52
Brackenheim	53
Böblingen	54
Besigheim	55
Weinsberg	61
Maulbronn	62
Waiblingen	63
Morbach	75
Schwarzwald	(− 43)
Spaichingen	− 15
Rottenburg	19
Nürtingen	24
Reutlingen	30
Herrenberg	36
Rottweil	38
Oberndorf	41
Tuttlingen	42
Horb	43
Nagold	44
Balingen	49
Urach	49
Tübingen	49
Calw	54
Neuenburg	65
Freudenstadt	67
Sulz	70
Donau	(− 35)
Kirchheim	− 15
Tettnang	18
Riedlingen	22
Saulgau	23
Württemberg (*contd.*)—	
Ravensburg	27
Ehingen	29
Göppingen	29
Leutkirch	31
Munsingen	34
Biberach	36
Laupheim	36
Wangen	37
Blaubeeren	45
Waldsee	45
Ulm	48
Geislingen	81

AUSTRIA.

Bohemia.

Czech districts	(+ 61)
Munchengrätz	+ 93
Koniggrätz city	92
Chotabor	86
Neubydzof	75
Mühlhaüsen	73
Horowitz	71
Turnau	71
Pisek	70
Kolin	67
Strakonitz	66
Schlan	65
Podiebrad	64
Caslau	64
Jungbunzlau	64
Melnik	64
Blatna	62
Prestic	61
Hohenmauth	60
Böhm-Brod	59
Semil	58
Wittingau	57
Ledec	55
Jicin	53
Koniggrätz Envi^s	49
Tabor	49
Selcau	49

Czech districts (*contd.*)—	
Moldautein ...	48
Reichenau ...	47
Neustadt a. d. M.	47
Pilgram ...	44
Starkenbach ...	44
Kattenberg ...	38
Beneschau ...	34
Deutsch Brod	+ 30
Mixed districts	(+ 37)
Karolinenthal...	+ 81
Pribram ...	65
Smichor ...	59
Raudnitz ...	57
Pilsen	57
Chrudim ...	57
Prag	55
Policka ...	55
Taus	52
Kralowitz ...	51
Klattau ...	51
Pardubitz ...	50
Laun	47
Schuttenhofen	30
Koniginhof ...	30
Budweis ...	27
Leitomischl ...	25
Polna	14
Brennau ...	+ 13
Senftenburg ...	− 5
Neuhaus ...	5
Landskron ...	6
Leitmeritz ...	30
Mies	− 43
German districts	(− 33)
Krumau ...	+ 18
Bischofteinitz ...	+ 13
Reichenberg town ...	+ 11
Kaplitz ...	+ 3
Komatau ...	− 11
Aussig ...	17
Teplitz... ...	20
German districts (*con.*)—	
Bohm-Leipa ...	23
Falkenau ...	24
Reichenberg ...	24
Plan	27
Dauba	28
Brüx	29
Tachau ...	31
Graslitz ...	33
Trautenau ...	35
Eger	36
Podersam ...	41
Karlsbad ...	42
Asch	42
Hohenelbe ...	43
Kaaden ...	44
Schluchenau ...	45
Saaz	47
Gablonz ...	47
Tetschen ...	57
Joachimsthal ...	58
Rumburg ...	64
Friedland ...	65
Luditz	65
Gabel	67
Tepl	− 69
Moravia ...	(+ 37)
Czech ...	(+ 65)
Gaya	+ 82
Ungar Brod ...	84
Wall Meseritsh	73
Boskowitz ...	69
Gross Meseritsh	66
Hollichau ...	60
Mistek... ...	52
Neustadl ...	51
Kremsierland ...	51
Tubitsh ...	47
Prossnitz ...	+ 29
Mixed ...	(+ 29)
Ungar Hradisch-land ...	+ 74
Iglauland ...	72
Mixed (*contd.*)—	
Ung. Brod ...	68 ?
Brunnland ...	50
Kromau ...	42
Wischau ...	38
Hohenstadt ...	37
Göding ...	36
Dachitz ...	36
Wersskirchen ...	34
Prerau ...	28
Littau	23
Znaim land ...	+ 22
Neutitshin ...	− 4
Olmutz land ...	13
Mahrish Trubau	14
Schönberg ...	15
Sternberg ...	− 27
German ...	(+ 0·1)
Brünn	+ ·16
Ungar Hradish City... ...	+ 1
Ungar Brod	+ 0·4 ?
Nikolsburg ...	− 1
Kremsier city...	− 1·5
Iglau „ ...	− 4
Znaim „ ...	− 6
Olmütz „ ...	− 6
Römerstadt ...	− 22
Austrian Silesia	(− 26)
Troppau city ...	+ 19
Bielitz-land ...	+ 7
Friedeck ...	+ 0·5
Teschen ...	− 1
Freistadt ...	10
Freiwalden ...	18
Troppau-land ...	29
Bielitz town ...	29
Jagerndorf ...	32
Hotzenplatz ...	45
Freudenthul ...	− 46

GALICIA (+ 44·7).

Polish.

Wedowicz	+ 44
Neu Sandek	44
Myslenice	41
Bochnia	34
Krakau land	31
Jaslo	29
Krakau city	29
Rzeszow	24
Tarnay...	13
Mielec...	4
Ropczyce	+ 1
Pilsno...	− 1
Mean of Poles...	+ 24
Do. of Boiks and Huzuls	+ 81
Do. of other Russniaks	+ 44

Russniak.

Zalesczyski	+ 78
Czortkow	73
Zolkiew	72
Przemysl	68
Hussiatyn	67
Mosciska	65
Stanislaw	61
Zloczow	58
Brzezany	56
Rohatyn	52
Tarnopol	48
Jaroslav	44
Lembergland	43
Sambor	42
Lemberg city	37
Sanok...	34
Sokol...	33
Grodek	31

Mean of Boiks & Huzuls.

H Snyatin	+ 96
H Nadwarna	95

Mean of Boiks, etc. (con.)—

H Kolomea	88
B Stry	88
H Kolusz	81
B Drohobycz	76

Bukowina.

H Wiznitz	+ 60
Czernowitz land	58
Sereth	52
Suczawa	51
Czernowitz city	47
Radautz	45
R Kotzmann	44
Kimpolung...	33
Storozynetz	30

Styria	(+ 6)
W Luttenberg	+ 69
W Marburg city	46
W Pettau	39
W Radkersburg	20
W Marburgland	19
Gröbming	12
Gräz land	11
Rann	9
Leoben	7
Leibnitz	2
Waitz	2
Lietzen	+ 1
W Windishgräz	− 2
Murau	6
W Cilli land	6
D. Landsberg	8
Bruck a. d. M.	10
W Cilli, city	11·5
Feldbach	12
Hartberg	18
Judenburg	− 32

Those marked W are Wendish wholly or in part.

German Styria	+ 2·7
Wendish Do.	+ 13·4

Carinthia...	(+ 29)
Vilach	+ 61
W Volkermarkt	57
Klagenfurt land	48
Spital	44
St. Veit	34
Hermagor...	13
Klagenfurt city	8
Wolfsberg...	2
Lower Austria	(+ 10)
Lilienfeld	+ 38
Sechshaus	25
Brück a. d. L....	21
Gr. Enzersdorf	21
Wien...	17
St. Polten	17
Hernals	16
Wiener Neustadt	15
Scheibbs	14
Krems	11
W^{r} Neust^{ct} land	11
Baden...	9
Kornenburg	6
Zwettl	3
Amstetten	+ 2
Horn...	− 0·4
Waidhofen city	− 3
Mistelbach	4
Neunkirchen...	10
Waidhofen land	10
Oberhollabrunn	− 16
Carniola (Krain)	(+ 60)
Laibach city	+ 81
Loitsch	79
Gurkfeld	77
Stein...	74
Littai...	66
Radmansdorf...	64
Czernembl	54
Laybach land...	53
Rudolfswerth...	52
Gottschee	44
Adelsberg	35

Carniola, etc. (*contd.*)—	
Krainburg	24
Upper Austria	(+ 14)
Gmunden	+ 43
Voklabruk	38
Steyr city	31
Ried	29
Perg	24
Steyr land	13
Kirchdorf	12
Linz city	12
Wels	9
Braunau	9
Rohrbach	5
Linz land	+ 5
Schärding	− 5
Freistadt	− 9

Tyrol.

German	(+ 35)
Bozen land	+ 82
Innspruck land	62
Bozen city	59
Schwaz	56
Innspruck	45
Meran	37
Imst	33
Landeck	29
Kitzbuhel	29
German (*contd.*)—	
Brixen	21
Bruneck	13
Kufstein	+ 10
Reutte	− 2
Lienz	− 8
Italian	(+ 97)
Roveredo city	+ 173
Riva	137
Primiero	118
Trient city	110
Tione	109
Borgo	98
Roveredo land	95
Cles	94
Trient land	87
Cavalese	76
Ampezzo	30 !?
Vorarlberg.	
Bludenz	+ 37
Bregenz	35
Feldkirch	14
Salzburg	(+ 44)
Tamsweg	+ 59
Salzburg city	58
Zell	56
St. Johann	51
Salzburg land	26

Triest, Görz, etc.	
Tolmein	+ 105
Triest city	98
Gradiska	97
Görz, land	92
Sessana	78
Görz city	56
Triest land	47
Istria	(+ 92)
Rovigno	+ 143
Volusca	114
Capo d'Istria	97
Pola	97
Parenzo	82
Lussinpiccolo	74
Mitterburg	39
Dalmatia	(+ 108)
Bencovac	+ 156
Imoski	147
Ragusa	131
Sign	127
Cattaro	115
Lessina	114
Knin	106
Spalato	102
Sebenico	81
Zara	78
Curzola	62
Macaresca	54

Switzerland.

	(+ 202) or	(+ 6·7).
Graubunden	+ 69	+ 57
Ticino	65	+ 58
Glarus	53	+ 37
Zug	38	+ 24
Vaud	37	+ 26
Sangallen	33	+ 17
Appenzell out	28	+ 12
Freiburg	25	+ 11
Thurgau	25	+ 14
Luzern	23	+ 4
Wallis	22	+ 10

	(+ 202) or	(+ 6·7).
Obwalden	21	− 8
Zurich	19	+ 9
Neuchatel	19	+ 6
Uri	17	+ 5
Bern-Jura	16	+ 0·4
Solothurn	13	= 0
Schwyz	12	+ 1
Appenzell in	12	− 12
Bern-Tiefland	9	− 8
Schaafhausen	6	− 8
Basel City	3	− 8

	(+ 202) or	(+ 6·7).		(+ 202) or	(+ 9·7).
Bern-Oberland...	2	– 10	Aargau... ...	– 6	– 18·6
Basel Land ...	+ 1	– 10	Nidwalden ...	– 97	–114
Geneva... ...	– 2	– 14·8			

Here the second column represents the figures for the respective cantons as they would stand if the blue eyes were always reckoned at one-half of the whole number of light eyes observed, which is about the proportion given in all the districts directly north of Switzerland. To the east, in Vorarlberg and Tyrol, and to the south in Piedmont, Lombardy and Venetia, the grey eyes generally, and sometimes very largely, outnumber the blue; but not to so great an extent as in the Swiss statistics. Kollmann seems to think the paucity of blue eyes in Switzerland due to Slavonic blood; for which I should read Rhœtian; but it is evidently in part a question of nomenclature; probably the truth lies somewhere between the two columns.

Belgium.

Turnhout	–61	Turnhout – 94	Marche	+ 6	
Dendermond	60		Verviers	6	Town + 16
Hasselt	53	Achel – 71	Namur	11	
Mechlin	46		Dinant	15	
Antwerp	42	City – 27	Arlon ...	16	
Furnes	35		Nivelles	17	
Bruges	37		Liège ...	21	City + 9
Löwen...	27	City – 12	Huy ...	27	
Tongern	25		Neufchateau	27	
Kortryk	24		Charleroi	27	
Gent ...	23	City + 17	Mons ...	28	
Audenarde	18		Tournai	+39	
Bruxelles	16	City – 20			
Ypern	– 9	{Messines and Wervicq} +14			

As Vanderkindere, like Virchow, Schimmer and Kollmann, made no category for neutral (light chestnut) hair, I get my index of nigrescence without the omission of this. And as he made no category for Virchow's grey or for my neutral eyes, I estimated that the half of his light (clair) eyes were blue, and the other half grey or neutral. I did not double Vanderkindere's black hair, because, whereas there is really very little black hair in Flanders and Brabant outside the towns, but plenty in the Walloon country, I satisfied myself by comparison with my own figures that the Flemish observers called all very dark brown black. I therefore abstained from doubling the "black." In this way I have, I think, brought the Belgian figures into something like harmony with the others. Probably those for the Walloon country are not quite dark enough.

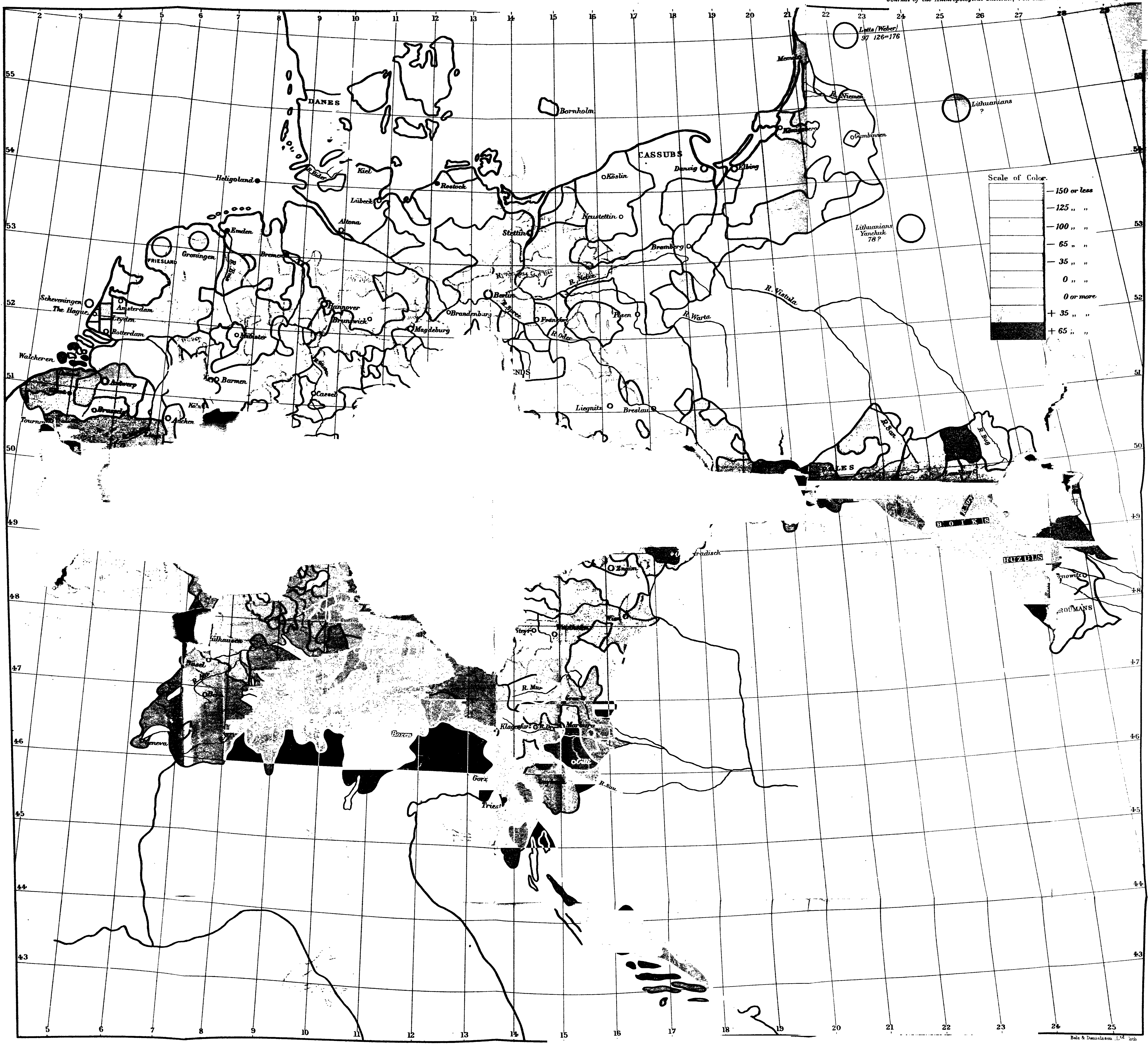
Holland.

	No.				No.		
Walcheren	(166)	+ 2·3 or	− 19	Zealand		+ 0·4 or	− 27
Schouwen	(59)	+ 14·3	− 47	Tholen	(51)	− 3·6	− 89
N. Beveland	(14)	− 95	− 22	Continental	(101)	− 1·2	− 20
S. Beveland	(26)	+ 15					

All the observations in Holland, the above by De Man and the following by myself, were taken on adults, and are reduced by 50 degrees to bring them into accord with the German and Belgian ones. Dr. De Man, like the Belgian observers, seems to give a wide extension to the word "black." In the last column above, "black" is treated as dark brown—the fact may lie between the two. In other respects De Man followed my methods. I have confidence in his results.

	No.			No.	
Groningen	(100)	− 183	The Hague	(250)	− 97
Friesland	(127)	− 165	Leyden	(137)	− 23
Rotterdam	(250)	− 113	Scheveningen fishers	(17)	− 161
Amsterdam	(250)	− 73			

Journal of the Anthropological Institute, Vol. XXXV., 1905, Plate XVI.



COLOUR CHART OF CENTRAL EUROPE.

COLOUR AND RACE.

Bale & Danielsson Ltd lith

Journal of the Anthropological Institute, Vol. XXXV., 1905, Plate XVII.

References to the Numbers on the Map.

SCOTLAND.

1 Lerwick, Scalloway. 285. -48·1
2 Kirkwall. 400. -30·7
3 Stromness, Hoy, &c. 168. -43·1
4 Wick. 300. -17·4
5 Strath Naver, Christison. 35. + 24·5
6 Stornoway. 125. -20·8
7, 8 Luirbost (McLeay). 283. -50
9 Ullapool. 50. -26
10 Portree. 70. + 14·4
11 Strath, &c. 145. -25·7
12 Kintail, Lochalsh. 120. + 11·8
13 Glenelg. 19. -11
14 Dingwall & Garve. 50. -14
15 Beauly, &c. 170. -23
16 Glenmoriston. 70. -56
17 Fort Augustus. 63. + 3
18 Inverness Town. 250. + 24·8
19 Nairn. 80. -42·5
20 Brodie (Flower Show). 125. + 9·6
21 Moray, low country. 210. -30·5
22 Cullen. 104. -38·4
23 Cullen Fishers. 149. -70
24 Keith & Huntly. 200. + 14·5
25 Buchan Adults (Gray). 2860. + 23·5
26 Buchan Children (Gray). 14500. -47
27 Badenoch. 50. + 24
28 Braemar, 170. -39·4
29 Strathdon & Strathdee (lower parts). 360. -39·6
30 Aberdeen. 700. -13·3
31 Banavie. 67. -69
32 Fort William. 406. + 24·4
33 Glennevis. 33. + 6·6
34 Athol. 240. -8
35 Laurencekirk. 200. -7·5
36 Stonehaven. 87 + 27·9
37 Ardgour. 70. -1·5
38 Oonich. 100. + 55
39 Glencoe (and South Ballachulish). 164. + 28·6
40 Ballachulish. 220. + 37·2
41 Breadalbane. 200. + 22
42 Dunkeld. 50. + 26
43 Brechin. 100. -7
44 Montrose. 60. + 36·6
45 Arbroath. 167. -32
46 Arbirlot. 100. -3
47 Seal, Luing. 68. -16·8
48 Lorn. 90. + 65·4
49 Inveraray. 100. -7
50 Dalmally, &c. 100. + 18
51 Glen Orchy. 60. + 3·6
52 Loch Katrine. 30. -44
53 St. Fillans, &c. 100. + 12
54 Comrie (Sports). 100. + 13
55 Perth. 665. + 1·3
56 Broughty. 98. -25·4
57 Easthaven Fishers. 26. -84
58 Colonsay. 28. -37
59 Strachur. 21. + 95
60 Arroquhar. 112. + 31·2
61 Callander & Doune. 150. + 15·4
62 Stirling. 500. -26
63 Auchterarder & Dunning. 180. +8·2
64 Forteviot Show. 300. + 8·7
65 Dunfermline. 52. -13
66 Dysart, &c. 300. -29·6
67 Buckhaven. 67. -30
68 Fife, Eastern. 230. -20·1
69 Kirkcaldy. 300. -33·5
70 Ilay, Hector Maclean. 88. + 20·4
71 Glasgow. 180. + 2·7
72A Edinburgh. 2000. + 6·4
72B Edinburgh, Canongate. 650. + 30·6
73 Newhaven Fishers. 176. -39·8
74 Leith, Musselbro', Dalkeith. 288. -20·6
75 Midlothian, Farmers and rural. 360. -62
76 Dunbar. 150. -45·8
77 Eyemouth Males. 100. -44
78 Eyemouth Fishers. 125. -66·4
79 Eyemouth Females. 100. 0
80 Berwick. 500. -37
81 Ayr. 500. -4·8
82 Leadhills & Wanlockhead. 50. -64
83 Moffat. 50. -28
84 Moffatdale. 40. -92
85 Vale of Yarrow. 60. -70
86 Peebles. 80. -25
87 Galashiels. 60. + 19·7
88 The Merse. 230. -48·2
89 Berwick, Farmers, &c. 100. -52.
90 Kelso. 50. -30
91 Melrose. 142. -20·4
92 Selkirk. 300. -48
93 Jedburgh. 150. -11·3
94 Teviotdale. 272. -36·9
95 Hawick. 180. -22·2
95A Hawick Farmers. 100. -23
96 Langholm. 200. -33·6
97 Eskdale & Lower Annandale. 156. -60·6
98 Dumfries. 200. -4
99 Castle Douglas. 50. -50 (should be coloured orange)
100 Sanquhar, &c. 200. -13·5
101 Maybole, &c. 250. -11·6
102 Stranraer. 150. + 55

ENGLAND.

1 Glendale, Wooler, &c. 87. -81·5
2 Carlisle Farmers & rural. 500. -60
3 Carlisle Town. 342. -17·4
4 Hexham Farmers. 125. -60·8
5 Hexham Town. 140. -2·6
6 Newcastle. 264. -9·5
7 Durham. 250. -13·12
8 Cockermouth. 184. -46·2
9 Keswick. 134. -29·7
10 Threlkeld, Langwathby, &c. 157. -31
11 Penrith. 130 -22·4
12 High Teesdale. 72. -94·2
13 Barnard Castle. 138. -22·5
14 Lorton, &c. 63. -64·4
15 Borrowdale. 50. -17·4
16 Kendal, Country. 150. -35·3
17 Kendal, Town. 150. -22
18 Ingleton & Kirby Lonsdale. 130. -45·3
19 Whitby. 212. -8·9
20 Whitby, Fishers. 33. -56·2
21 Isle of Man. 225. +3·37
22 Craigneish. 40. +32·5
23 Lancaster Town & Country. 400. -29·6
24 Upper Ribblesdale, Malham, &c. 185. -3·4
25 Ripon. 120. -17·3
26 Thirsk Market. 260. -13
27 Malton. 50. + 12
28 Flamborough (Pitt-Rivers). 73. + 99
29 Bridlington. 100. -45

ENGLAND (*continued*).

30 Bridlington Quay. 100. -12
31 Skipton. 233. -4·5
32 Keighley Farmers. 50. -38
33 Keighley Town. 350. -38
34 Haworth. 155. -16·8
35 Bradford. 1400. -7·7
36 Leeds. 440. -8·5
37 York. 225. -4·1
38 Beverley Market. 166. -16·3
39 Hull. 200. + 12·4
40 Preston. 100. + 26
41 Halifax. ? (Excursionists). 150. + 6·5
42 Farnley & Gildersom, 150. -17·4
43 Liverpool. 100. + 37
44 Manchester. 475. + 20
45 Barnsley Fair. 500. + 0·6
46 Gainsborough Farmers. 150. -28
47 Gainsborough Town. 150. + 38·6
48 Market Rasen. 100. + 3
49 High Peak. 40. -30
50 Youlgrave. 61. -65·5
51, 52 Newark. 300. -15
53 Lincoln. 500. -8·8
54 Biddulph & Moorlands. 50. + 36
54A Hanley. 194. + 53·8
55 Leek. 120. + 24·7
56 Derby. 100. -45
57 Nottingham, Farmers. 100. -22
58 Nottingham Town. 700. + 6·2
59 Barrowby, &c. 300. -11·5
60 Grantham. 300. -4·6
61 Boston, Country. 130. -78·5
62 Boston Town. 340. -17·5
63 Shrewsbury. 282. + 45
64 Shrewsbury, Rural. 62. + 74
65 Stafford. 70. + 33
65A Stoke. 200. + 19
65B Stoke, Country Folk. 143. + 27·5
66 Burton. 360. + 5·8
67 Leicester, Rural. 30. + 14
68 Leicester. 540. + 24
69 Rutland. 70. -1·5
70 Stamford, Country. 200. -20·7
71 Stamford. 200. + 21·6
72 Wolverhampton. 300. -1·2
73 Tamworth Market. 200. -23
74, 75 Peterborough. 113. + 15
76 Ely. 108. -5·6
77 Norwich. 290. -4·8
78 Yarmouth (Regatta). 450. + 40·6
79 Yarmouth, Fishers & Seamen. 100. -20.
80 Ludlow. 100. + 35
81 Cleobury. 100. + 37
82 Kidderminster. 373. + 9·8
83 Stourport. 100. -18
84 Birmingham. 667. + 13·2
85 Rugby. 53. + 75·4
86 Northampton. 300. + 28·2
87 Cambridge. 200. + 28
88 Bury St. Edmunds. 226. o. Country. 124. -39·6
89 Ipswich, Market. 150. -10·8
90 Ipswich, Town. 250. + 13·6
91 N. E. Hereford. 50. + 98
92 Bewdley. 500. + 39·2
93 Worcester City. 1000. + 15·4
94 Worcestershire, Central. 700. + 1·9
95 Stratford-on-Avon, Fair. 300. + 30·4
96 S. W. Northants, Heyford, &c. 180. + 34·5
97 Barley, &c. (Haddon). 39. + 0·1
98 N. W. Worcestershire. 500. + 33
99 Hereford. 275. + 41·3
99A Hereford, Rural. 218. + 46·4
100 Forest of Dean. 52. + 84·4
101 Monmouth. 70. + 75·7
102 Newport. 133. + 80
103 Gloucester, Market. 66. + 40·8
104 Gloucester City. 500. + 38
105 Tewkesbury. 100. + 18
106 Moreton-in-the-Marsh. 108. -26·6
107 Oxford. 720. -1·9
108 Oxfordshire. 96. -24
109 Aylesbury. 100. -18
110 Dunstable. 240. + 33·3
111 Braintree, Country. 40. -3·1
112 Braintree, Town. 83. + 63·7
112A Brentwood. 70. + 68·8
113 Colchester, Farmers. 210. -6·2
114 Colchester, Town. 113. + 35·2
115 Dursley. 100. + 20
116 Stroud. 100. -13
117 Cirencester Market, Cricklade. 400. + 5·7
118 Reading, Country Districts. 60. -30
119 Reading. 200. -4
120 London, Lower Classes. 6,000. + 39·2
121 London, Upper Classes. 820. + 7·2. Slums. 250. + 57·4
122 Greenhithe. 100. -24
123 Bristol, Upper Classes. 600. + 15
124 Bristol. 6,400. + 31
125 Bristol Slums. 827 + 45
126 Bath. 236. + 25·9
127 Bath, Upper Class. 60. -23·4
128 Malmesbury. 170. + 20·2
129 Chippenham. 750. -10
130 Laycock. 175. -18·3
130A Corsham. 110. + 12·2
131 Calne. 70. + 16
132 Swindon, Farmers. 160. -48
133 Swindon, New Town. 182. + 20·2
134 Swindon Fair. 360. + 1·4
135 Bradford-on-Avon. 600. + 34
136 Trowbridge, 650. + 18·4
137 Trowbridge, Farmers. 83. + 1
138 Devizes, Farmers. 76. -5
139 Devizes. 197. + 91
140 Pewsey Feast. 228. + 13·1
141 Marlborough, Town. 125. + 5·6
142 Marlborough, Rural. 100. -25
143 Hungerford Fair. 120. -13·3
144 Farnborough. 25. -48
145 Horsham Market. 212. + 2·9
146 Battle. 33. + 9·1
147 Ashford Market. 220. + 16
148 Canterbury. 175. -1·2
149 Dover. 325. -5·4
150 Dover Boatmen. 60. -53·6
151 Cheddar and Axbridge. 55. + 5·3
152 Glastonbury. 50. + 58·5
153 Wells. 135. + 46·7
154 N.E. Somerset. 200. + 41
155 Warminster. 109. -101
156 Heytesbury, Tilshead. 72. -8·3
157 Mere, Tisbury Hindon. 57. + 8·7
158 Wilton. 92. -12·2
159 Salisbury, Market. 340. + 2·5
160 Weyhill Fair. 291. 6·4
161 West Somerset. 90. 43·3
162 Wellington. 180. + 42·7
163 Taunton. 300. + 51
164 Ilminster. 35. + 74·3
165 Yeovil. 140. + 42
166 Gillingham, &c. 52. + 60
167 Dorchester. 100. + 30
168 Wareham. 50. + 38

ENGLAND (*continued*).

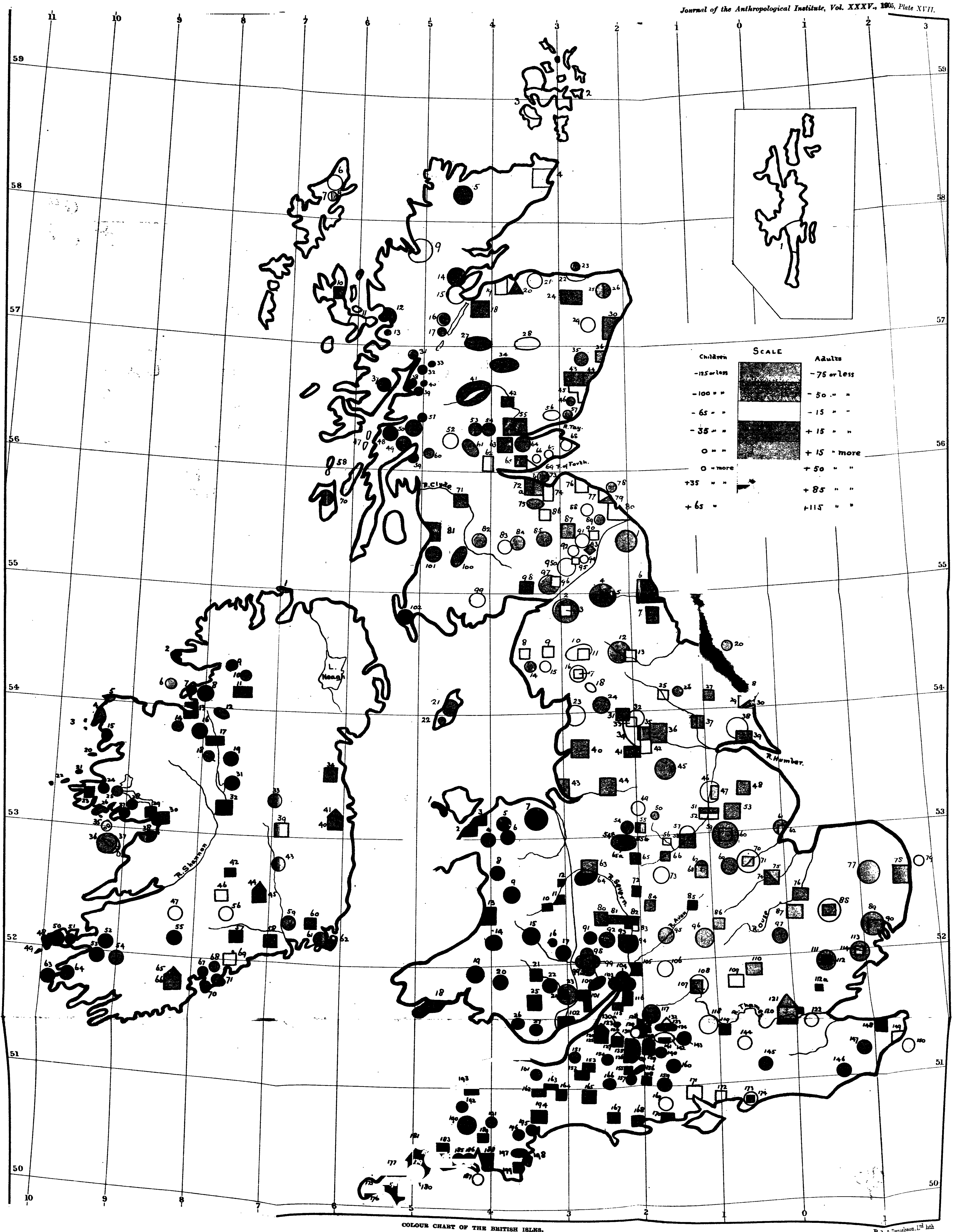
169 Ringwood Market. 100. -18
170 Christchurch. 75. -10·7
171 Southampton. 400. -23
172 Fareham. 175. -18·3
173 Chichester, Farmers. 167. -31
174 Chichester. 93. -8·5
175 Penzance. 250. + 111·2
176 Newlyn, &c. 144. + 62·5
177 Redruth. 400. + 110·7
178 Falmouth. 350. + 81·6
179 Truro, Country. 223. + 97
180 Truro, City. 500. + 61
181 Padstow. 158. + 46·2
182 St. Austell, Flower Show. 850. + 75·5
183 Bodmin. 60. + 58·4
184 Fowey. 56. + 35·6
185 St. German's, &c. 87. + 65
186 Torpoint. 120. + 59
187 Plymouth Fishers. 95. -43
188 Plymouth. 830. + 40·5
189 Tavistock, &c. 100. + 73
190 Launceston Market. 160. + 36·3
191 Okehampton. 80. + 46·3
192 Holsworthy Fair. 100. + 62
193 Bideford. 175. + 29·6
194 Exeter. 950. + 52·6
195 Bovey. 30. + 53·4
196 Ashburton Holne. 55. + 96·4
197 Totnes, &c. 360. + 52·8
198 Brixham. 200. + 52
199 Dartmouth. 200. + 74

WALES.

1 Holyhead. 41. + 97·6
2 Carnarvon. 278. + 97·7
3 Bangor. 121. + 91·7
4 Beddgelert. 68 + 107·4
5 Llanwrst. 100. + 68
6 Bettws. 36. + 83·2
7 Ruthin (Eisteddfod). 150. + 76·6
8 Dolgelly. 40. + 97·4
9 Dinas Mawddwy. 50. + 128
10 Newtown, 11 Montgomery, 12 Pool } 50. + 56
13 Aberystwith. 146. -76·6
14 Tregaron, &c. 35. + 85·6
15 Rhaidr-gwy. 62. + 74
16 Radnor, &c. 80. + 63·7
17 Kington, &c. 70. + 78·4
18 Pembroke and Castlemartin. 90. + 50
19 Caermarthen (Eisteddfod). 700. + 124·6
20 Welsh Congregation (at Bristol). 100. + 109
21 Brecon. 100. + 77
22 Crickhowel. 80. + 67·2
23 Abergavenny, Market. 200. + 45·5
24 Abergavenny. 100. + 74
25 Merthyr, Pant, &c. 160. + 66
26 Coast. 97. + 46·3
27 Llandaff. 33. + 135

IRELAND.

1 Malin Head, O'Doherties. (Browne.) 226. -54
2 Malinmore & Glencolmkill. (Browne.) 196. + 186
3 Inishkea. (Browne.) + 1·4 } 650 in the three
4 Mullet. (Browne.) + 43·8 } 650 in the three
5 Portnacloy. (Browne.) + 37·8 } 650 in the three
6 Innismurry. 19. -52·7
7 Milkhaven, &c. 52. + 68
8 Manor Hamilton. 105. + 79·5
9 Pettigo. 53. + 83
10 Fermanagh. 166. + 28·8
11 Enniskillen. 267. + 7·5
12 Cavan, Hill country. 70. + 19
13 Sligo. 295. + 68
14 Colooney & Ballysadare. 72. -7
15 Ballycroy. (Browne.) 338. + 58
16 Moytura. 103. + 128·2
17 Boyle. 125. + 75·2; Carrick-on-Shannon. 85. + 74·1
18 Strokestown. 79. + 77·4
19 Longford. 67. + 58·2
20 Clare Island. (Browne.) } 252. + 2
21 Inishturk. (Browne.) } 252. + 2
22 Inishbofin, Inishshark. (Browne.) 250. + 31
23 Clifden. 111. + 138·7
24 East Connemara. 100. + 82
25 Cong, Joycecoy. 75. + 7·2
26 Carna & Mweenish. (Browne.) 500. -5
27 Iar Connaught. 95. + 93
28 Oughterard. 93. + 68
29 Galway. 300. + 62
30 Claddagh. 170. + 11·2
31 Ballymahon, &c. 64. + 84
32 Athlone. 125. + 72·8
33 Leinster (Generally)
34 Drogheda. 169. + 30·6
35 Garumna, &c. (Browne.) 614. -25·5
36 Aranmore. 90. + 35·4
37 Inishmaan. (Haddon). 37. -65
38 Ballyvachan. (Browne.) 114. + 13·3
39 Kildare. 68. + 16
40 Dublin. 1,300. + 29·5
41 Dublin (Upper Classes). 450. -16·2
42 Thurles. 31. + 68
43 Athy & Carlow. 35. -9
44 Kilkenny. 20. + 15
45 Kilkenny. 220. + 15
46 Cashel. 142. -14·4
47 Charleville. 32. -41
48 Dunquin } (Browne.) 170. + 87·3
49 Blasket Island } (Browne.) 170. + 87·3
50 Ventry. 100. + 120
51 Dingle. 133. + 81·8
52 Castlemaine. 150. + 114·7
53 Killorglin, Milltown. 234. + 104·7
54 Killarney. 75. + 30·6
55 Mallow. 93. + 119·3
56 Cahir. 92. -41·5
57 Cappoquin. 55. + 81·4
58 Waterford. 100. -24 (should be coloured yellow)
59 New Ross. 228. -11·6
60 Wexford. 471. -9·2
61 Forth & Bargy. 80. + 6
62 Forth. (Browne.) 319. + 19·3
63 Valentia. 36. + 105·7
64 Cahirciveen. 258. + 113·8
65 Cork (Upper Classes). 250. + 8·4
66 Cork. 1800. + 16·1
67 Cloyne. 300. + 5·6
68 Kilteskin, Holy Well. 191. + 37
69 Youghal. 120. -29·4
70 Ahadda, &c. 73. + 14·7
71 Geileen Fishers. 33. -8·8



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NATIVE CIRCUMCISION LODGES IN THE ZOUTPANSBERG DISTRICT.

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The following short notes on the above subject are written at the request of Mr. Von Dessauer, the Johannesburg Secretary to the Anthropological Section of the South African Association for the Advancement of Science, and it is hoped that liberal allowances will be made for the numerous shortcomings that must necessarily occur in a subject zealously and secretly guarded by the people indulging in its practices. Had not repeated requests been made for them, the writer would have been somewhat loth to place the notes before the public for some considerable time, or at least until more facts and circumstances had been elicited.

During the year 1904, the native custom of circumcision made itself more pronounced in the Zoutpansberg district than it had done for many years, so much so that anyone dealing with the people and their administration felt bound to collect some notes and data on the subject. The following rough sketch is an attempt to deal with the subject chiefly in relation to its social effects on the native mind.

The custom exists in many parts of South Africa: in the Cape Colony, the Transvaal, Rhodesia, Bechuanaland, etc. It existed at one time amongst the Zulus, but was prohibited by Tshaka at the time he successfully amalgamated the scattered Zulu tribes. It is to this day spoken of as one of Tshaka's master strokes. He issued a proclamation prohibiting the custom, against the advice of those of his councillors, who told him that the people so cherished the custom that he was bound to fail in his attempt to stop it. His order was obeyed, and to this day it is not known amongst the Zulus. The custom of wearing the prepuce cover by the Zulus is traceable to this date and action.

Circumcision is practised throughout the Transvaal, but these remarks are confined to the Zoutpansberg district, where the matter has been under observation. It varies considerably amongst the different people in its methods and practices. A section of the people, known as the Bavenda, would claim probably the most attention, as they have many more customs and manners in relation to the rites than the other people. Those of the Basuto are similar and more uniform, whilst those of the Tshanganas savour of both the Bavenda and Basuto, from whom they have more or less adopted the habit.

Circumcision (Morundo Mgoma of the Sevenda, Lebollo of the Sesutho) in this district, seems to have originated with the arrival of a family of people called the Balemba, who seem to have come down with the Bavenda from, as near as can be ascertained, the Congo Valley. It settled itself amongst the Bavenda along and contiguous to the Zoutpansberg, principally in the north and eastern parts. The customs and traditions appertaining to circumcision are kept up principally by these people.

The hereditary circumcision priests are usually members of the Balemba, although in other parts of the district priests from other tribes are not unknown. These people would appear to have come in contact with some Semitic influence. In support of this contention may be mentioned the following observances of the Balemba:—

1. The circumcision.
2. In their own houses they are said not to eat the flesh of animals that have not been killed according to their own customs, principal amongst which is the cutting of the animal's throat by some member of the tribe.
3. They do not eat the blood nor the flesh of pigs.
4. They are supposed not to give their women away in marriage to other tribes, and if they take wives from outside they first have to undergo purifying rites.

Originally the lodges, more commonly called schools, were held at intervals of four or five years. It is essential that there should have been a good harvest, for great quantities of food are required and consumed. The summoning of the lodges was in the hands of the biggest chiefs, such, for instance, in their time, as Modjadjie, Mogato, etc. The occasion of convening a lodge was usually the time when a chief's son was to be circumcised. The remaining members of the tribe attend for the same purpose. Of later years it has become customary for most chiefs and Indunas, or headmen, to hold their own lodges. This is a sign of the declining power of native chiefs. In some cases one or two agree to amalgamate, subject to their social relations with each other, and in others the popularity of the priest attracts individual members.

The time of year selected is usually about April or May, when the harvest is ready. The place selected is some very remote and secluded spot in a river bed, where the cold at night is intense, owing to the time of year, and the situation of the lodge. The cold is calculated, with other hardships, such as whipping and privations, to harden the physique of the young fellows attending, and to make them manly.

The doctor, a priest, *i.e.*, the person who actually performs the operation, is chosen by the chief responsible for the lodge. From that time the appointment becomes hereditary, either through the priest instructing his own son or adopting someone else to teach and instruct in the craft.

The chief convening it gives due notice to the families, who bring their male relations, big and small: the uncircumcised to undergo the operation, and the circumcised to perform certain functions allocated to them. The latter all carry long but different wands, signifying their grades in the lodge; anyone pretending, by means of carrying the emblem, that he has passed initiation, is easily discovered and is severely beaten and roughly handled.

The people sit in a circle, with the uncircumcised candidates in the centre; rising up, they dance round the candidates, who remain on the ground, and proceed to compose songs, which become established and are the only ones permitted in the country during the existence of the lodges.

While the schools last no business is allowed; work is suspended, disputes, transactions, marriages, etc., do not take place. Intercourse between husband and wife is forbidden. Infringements of regulations are punishable at the discretion of the teachers.

The teachers are said to be of three grades, chosen from previously-circumcised people, are usually young men, and have different functions to carry out. They instruct the newcomers in the laws of the school, punish infringements of the regulations, and dispense the food. The status of each of these is marked by the wand he carries. They are considered as headmen by the gang undergoing circumcision under their tuition, even in matters occurring afterwards. The candidates on entering school usually receive some name, such as Lesiba, Letule etc., which they adopt, much in the same way as the Zulu after enrolment is not infrequently known by the name of his regiment. This name acts as a countersign in time of war and disturbance.

At the actual circumcision, the patient is led into a large assembly of people, and placed sitting on a stone opposite the priest. There may be one or more priests; his or their faces are covered with a veil of skin or other substance. The patient is led by young circumcised men, who promptly seize him, holding his head in such a position that he may not see what is going on. Shouts and screams are raised, and such noise made by the beating of drums, etc., as to completely drown any shrieks, or cries, that the patient may utter, which would be looked upon as cowardly and unmanly. Not infrequently he is in such a frenzied state as to be quite oblivious to what is going on. The prepuce is removed with one stroke of the knife or sharp instrument, and the second skin is more carefully removed. The wound is then wrapped up for four or five days in leaves possessing some curative or healing power. Until the four or five days are over, the patient is not allowed to remove the dressing or to apply any other form of lotion, and is permitted to drink only such water as is given him by the doctors in attendance. When the time is past the patients paint their whole bodies with white clay, which is usually left on, or renewed, until the conclusion of the lodge.

The lodge itself consists of roughly-built barracks, such as natives build in time of war, or for temporary shelters. The arrangements of the huts vary, but the more popular way of building is by joining the huts together in two long rows about 10 feet apart, with doors facing the passage running down the whole length of the construction. Fires are kept up all night along the passage, as also in the huts themselves. This is to encourage warmth, no clothing of any description being permitted, except such as the people can plait themselves from grass or palm leaves. These kits are generally made of the same pattern, and are of symmetrical shape, more for appearance than use. The women undergoing initiation have grass ropes twined round them, differing considerably from those worn by the men.

Food is prepared by women either at their own kraals or at some specially appointed place, and is brought once or twice a day and deposited at a fixed spot. At the spot where the food is placed are long laths stuck in the ground, in the form of a barrier, through which no woman dare pass; on to these laths all the grass rings used by the women in balancing the food vessels on their heads are threaded. These laths are supposed to fill up with rings simultaneously with the breaking up of the lodge.

The food is for the general community, and is dispensed by the people responsible for that particular branch. Any that is badly cooked or prepared is rejected and thrown away. The unfortunate person who prepared the rejected food is usually insulted and beaten when she next comes. The women on reaching the appointed place with the food have a formula to go through, by way of announcing their arrival to the teachers. This is made up of obscene epithets, made by the women, and responded to in equally obscene language by the teachers. Having received response to the warning, they place the food on the ground, thread the grass rings, and get away.

The lodges usually last three months, or even longer in some parts. No pupil is under any circumstances supposed to leave the lodge before it is over. During its existence gangs of men are sent round all the villages to induce by force or persuasion the uncircumcised to attend. If they cannot be got to attend they are generally persecuted in some way well known to, and effectually carried out by, the community.

Native public opinion drives many to submit to the rites. They are jeered at if they refuse, and are treated to ridicule, such as the following expressions: "You are a woman," "Your eyes are unopened," and perhaps the still greater taunt, "You will not please the women, who prefer circumcised men"; and it is generally said at the conclusion of the lodges, that the newly circumcised are greatly favoured by the women. During the existence of the school, the occupation of the people is to sing, drill, dance and march about in large bodies, etc. The composition of the songs they are taught is obscene and lewd, bearing entirely on sexual matters. During the period no man attending the lodge is allowed intercourse with his own wife, yet the morals are allowed to become very lax; prostitution is freely indulged in, and adultery is not viewed with any sense of heinousness on account of the surroundings.

Towards the conclusion of the lodge, the pupils are liable to service, in some shape or form, to their chiefs, rendered principally in wood-cutting, collecting goats, or picking gardens. The school is then concluded, and all huts, utensils, etc., used in connection with it at any time are destroyed. The pupils wash themselves for the first time since entering the lodge, return to ordinary clothing, and proceed in a body to the chief or Induna to pay their fees before being released.

It is said that any deaths occurring amongst inmates during the existence of the school are kept secret and that the bodies are quietly buried in the vicinity without any shape or form of mourning, and the deceased is simply looked upon as having disappeared.

The foregoing remarks are based chiefly on the customs attending the Bavenda, who are more enthusiastic and spend more time at it than any other tribes in the district. The customs of the Basuto tribes (lodges) are much the same, varying, however, in many details. The chief variations, perhaps, are that their schools are made up of three terms, with a vacation of about three years between each. The first term the boys attend as youngsters, they are initiated into the ways of the lodge, and have their faces scarred with sharp instruments. This is very noticeable amongst several of the tribes. At the second term, three years after, the actual circumcision takes place, and at the last term, three years after that again, the final initiation is given. Unlike the Bavenda, the Basutos spend as little time as possible in the schools; they have no regular priests or doctors to perform the circumcision, which is done by any volunteer from amongst those present who have been previously initiated and who may be approved. The patient is blindfolded, so that he never gets to know who performed the operation on him.

The influence to attend these lodges is so great that many natives who have become Christians break away from the mission stations and join them. Much immorality occurs in connection with the lodges; debauchery is carried on at which all the candidates and visitors are encouraged to indulge in eating and drinking and licentiousness. That this, and the teaching of doctrines of a debasing nature in respect to sexual relations, etc., go on at the lodges is true, but when one sees the people giving up their whole minds to it, submitting without resistance to the circumcision and putting up with extreme hardships in the way of cold and disease in the lodges, and the entire suspension of their ordinary duties, it makes it difficult to dispel the idea that it is their form of religion or perhaps some cherished national custom handed down to them.

It is most difficult to get any information about the matter. The very greatest secrecy is maintained, and even people who become converts at the mission stations seldom can be got to reveal the facts of what occurs in the lodges. People who have been forcibly taken into the lodges against their wishes and circumcised have, when released by the authorities, refused in many cases to say what occurred to them beyond that they had been circumcised. This has been found from men of 60 or 70 years of age to young boys of 10 or 12 who have been pressed into the lodges. A profound secrecy is maintained by all. At an earlier period in history it is beyond all doubt that any person giving away the oaths they took in the lodges was killed as a punishment. This cannot be done now, but the fact is not hidden that they are impeached in some way which acts as a deterrent, keeping the people to whatever oaths they may have taken.

THE CHRONOLOGY OF PREHISTORIC GLASS BEADS AND ASSOCIATED CERAMIC TYPES IN BRITAIN.

By the Hon. John Abercromby.

[With Plates XVIII–XXII.]

In a paper by P. Reinecke (*Die Altertümer unserer heid. Vorzeit,* Band V, p. 76) he places in the Early Bronze Age some of the glass beads, more especially the ribbed, notched (segmented) beads of opaque, blue vitreous paste, occasionally found in British barrows.

These ribbed or notched beads seem to be made from a short tube of thin opaque glass or vitreous paste of cobalt blue or light greenish colour, with a diameter of from 3 to 6 mm., by grooving it all round at intervals of about 3 mm. These grooves are at slightly different intervals on different beads and the grooving or ribbing varies in depth; sometimes it forms a very slight indentation. The resultant segments are therefore sometimes more globular, sometimes flatter, in which case the bead at its greatest diameter may be almost angular. In their present state the ribbed beads are composed of from 4 to 12 segments, and they are often greatly discoloured. The beads which seem to resemble them most and also exhibit the same individual differences are from Tell-el-Amarna, *c.* 1400 B.C. in the Ashmolean Museum. But some of the ribbed beads of the XXVI dynasty, *c.* 600 B.C., in the British Museum, also resemble the beads from Wilts and show the same irregular make.

Ribbed beads are not at all uncommon in post-Roman times in Allemannic, Merovingian and Anglo-Saxon graves, but they differ in several respects from the above and cannot be mistaken for them.

As the accurate placing in time of these beads, and of the pottery types that accompany them, is a matter of considerable archæological importance, I give below all the data of which I am aware that may tend toward this result.

1. In 1723 Stukeley opened a barrow near Stonehenge and found at a depth of fully 4 feet an urn full of cremated bones, apparently of a girl. Mixed with bones were "beads of all sorts and in great number, of glass, of diverse colours, most yellow, one black, many single, many in long pieces notched between, so as to resemble a string of beads and these were generally of blue colour. There were many of amber of all shapes and sizes, flat squares, long squares, round, oblong, little and great. Likewise many of earth of different shapes, magnitude and colour, some little and white, many large and flattish like a button, others like a pulley. But all had holes to run a string through. Many of the button sort seem to have been covered with metal; one was covered with a film of pure gold." (*Stonehenge*, p. 44, Pl. XXXII.)

This important find is no doubt lost, but among the objects figured are a bronze knife-dagger 6·3 cm. long with two rivets; a fragment of pottery with incised chevrons and zigzag; a bronze awl; three small amber beads; a ribbed or notched bead of blue glass; a small black glass bead; a white bead of earth and a circular bead of earth covered with gold with several circular lines incised, parallel to the circumference.

2. In a barrow at Kingston Deverill Sir R. Hoare found a burnt interment and, among the bones, over forty amber beads of various forms and sizes; some of jet; some ribbed ("pulley") beads of vitrified matter; and a bronze pin (awl). *Anc. Wilts*, i, 45, 46. This find seems to be lost.

3. In another barrow not far from the last was found a burnt interment and among the bones some beads of amber, jet and glass, and a pair of ivory tweezers. *A.W.* i, 46. This find is also lost.

4. In Upton Great Barrow at a depth of 11 feet was found a cinerary interment and with it sixteen ribbed beads of green and blue glass; five of jet and twenty-seven of red amber, the whole forming a necklace. *A.W.* i, 66, 67. These are now in the Devizes Museum.

5. In a barrow at Winterbourne Stoke was found an urn inverted over cremated bones. Among them were a small bronze pin (awl); five rings of Kimmeridge shale, a small conical button of the same material and perforated; several glass ribbed beads; one of jet; and one of amber. *A.W.* i, 114. The shale objects and the amber bead are now at Devizes; the rest of the find is lost.

6. In another barrow not far off was unearthed a large cinerary urn inverted over burnt bones and a smaller vessel. Among the remains were two shale discs, one large perforated amber bead, four ribbed beads and three of a black colour. *A.W.* i, 114, 115. Of this find only the small vessel exists in the Devizes Museum.

In a small barrow on Westbourne Stoke Down, Hoare found a burnt interment and a large flat glass bead of very opaque glass with spiral lines of blue and white. *A.W.* i, 119. This bead is in the Devizes Museum and is certainly post-Roman and Saxon.

7. In one of the barrows south of the Circus at Stonehenge was found a deposit of burnt bones and a great many beads. Some were ribbed glass beads; two of stone, one of transparent horn-like substance; but most were of amber and much decayed. *A.W.* i, 163. At the Devizes Museum are preserved three of the ribbed beads, the two of cherty stone and ten small round amber beads.

8. Another barrow of the same group had been partially opened before, thereby disturbing a skeleton accompanied by a drinking cup. On the floor was found another skeleton with a quantity of beads, among them some glass ribbed beads. *A.W.* i, 163. Three of the ribbed beads and nine of the small amber beads are in the Devizes Museum.

9. In another barrow of the same group were found two small flat rings of Kimmeridge shale and one ribbed bead of blue glass. *A.W.* i, 168. All these objects are in the Museum at Devizes.

10. In another barrow of the group was a burnt interment and a great variety of amber, jet and glass beads. *A.W.* i, 205. Of this find there are preserved at Devizes two ribbed beads of blue glass; eleven round amber beads and six fusiform lignite beads.

11. In one of the Wilsford group of barrows was a cremated interment and a considerable quantity of glass, jet and amber beads and a bronze pin (awl). *A.W.* i, 207. The whole of this find appears to be lost.

In one of the Lake group of barrows Hoare found a burnt interment and with it a lance head of bronze; an ivory bead, a bronze pin and a large stone bead stained red. *A.W.* i, 210. The bronze awl and the bead are at the Devizes Museum. The bead is of very opaque glass with concentric layers of black and dark red, and seems to me to be certainly Saxon.

12. In another barrow of the Lake group was a cremated interment, four glass ribbed beads, one of stone, two of amber and a bronze pin or awl. *A.W.* i, 211. One of the greenish blue ribbed beads and the stone bead are preserved at Devizes; the other ribbed glass beads are in the British Museum.

13. In a barrow at Woodyates, Hoare found a very large urn, 47 cm. high, containing burnt bones and beads of amber and glass. *A.W.* i, 238. This find is apparently lost.

14. In an adjoining barrow with two tumps, surrounded by a circular vallum, Hoare discovered in one of the tumps a burnt interment accompanied by several beads of glass, amber and jet; a small bronze awl and a beautiful little cup. This "expanded" cup is at Devizes, the rest of the find being lost; one like it from Beckhampton, Wilts, is figured on Pl. XVIII, Fig. 1. In the other tump was another burnt interment, about 100 amber beads, some flat pieces of amber; a small bronze knife with three rivets and a bronze awl. *A.W.* i, 238. The knife and some of the amber beads are now at Devizes.

15. In a barrow at Aldbourne, Wilts, Canon Greenwell found at the centre a cinerary interment. Among the burnt bones were three ribbed beads of vitreous paste of whitish-green colour; two beads of amber; one of lignite; pieces of a small bronze knife and two bronze awls; and two "incense cups" of the expanded type, peculiar to Wilts and Somerset; one of these and its cover are figured on Pl. XVIII, Figs. 2, 3. *Arch.*, vol. 52, pp. 50–53. These are now in the British Museum.

16. In a barrow on Tan Hill, Wilts, Dr. Thurnam found a burnt interment and with it a small ribbed bead of bluish glass and three larger ones of jet. *Wilts Arch. Mag.* vi, 324. These are now preserved in the British Museum.

17. In a barrow on the Wansdyke, Wilts, Dean Merewether found a ribbed glass bead, figured in *Proc. Arch. Inst.* 1849, *Salisbury*, Fig. N.

18. In a barrow at Syrencote Down, Wilts, five jet and eight pale blue ribbed glass beads were found with a burnt interment. They are now in the British Museum.

19. In a barrow on Bloxworth Down, Dorset, Warne records the finding of a large cinerary urn, Pl. XVIII, Fig. 4, inverted over cremated bones. Among these lay six ribbed glass beads, eight oval amber beads and a pair of bone tweezers. *Celtic Tumuli*, ii, 13. All these objects are in the British Museum.

20. Under a tumulus at Priddy, Somerset, was found a primary interment of burnt bones and among them four rich red amber beads, highly polished; a small blue bead of opaque glass; part of a bronze knife dagger and a bronze ring. *Arch. Journ.* xvi, 148–9.

21. The tumulus of Carn Creis, Boscreggan, Cornwall, was explored by Mr. Borlase. At the centre was a natural granite rock of squarish tabular form, 8 feet across and 4 feet high, surrounded by a ring of stones 18 feet in diameter, and the whole had probably been covered with a heap of small stones. Resting against the south side of the rock was the greater part of a barrel-shaped urn. The pottery was thin and earthy, much mixed with gravel and from 6 mm. to 1 cm. thick. It was 30½ cm. high and had two handles with a perforation just large enough to receive a cord. It contained, besides ashes, bones and a few rough chips of flint, a fragment of a globular glass vessel, 6 mm. thick, of olive green hue against the light, but the surface was covered with a bluish black coating of an iridescent appearance. Its diameter must have been about 7·6 cm. On analysis it was found to contain no lead, but much iron, as is the case with some (Late Celtic) beads from Yorkshire.

About 45 cm. east of this vessel were fragments of another. Close by lay fragments of a third urn and a complete urn 10 cm. high. 35 cm. east of this small urn and touching the inner side of the stone circle were three pieces of black, hardbaked, sand-glazed pottery 1 cm. thick. One of these is part of a plain bevelled rim and on another can be traced a rude pattern incised with a pointed instrument. Together with these were twelve peculiar beads of glazed earthenware. The colour of the glaze is a bright turquoise blue; ten are cylindrical and fluted; the two others are larger and barrel-shaped, though fluted like the rest. *Arch.*, vol. 49, pp. 186–188, where the beads are figured. The beads are in the British Museum and the larger ones are unlike any that I know. The glass and the glazed pottery seem to have disappeared, but a fragment of the urn in which the glass was found is in the Truro Museum. The urns are figured on a very diminutive scale in the *Journ. Instit. of Cornwall*, vi, Pl. III, but seem to belong to types that are known in Cornwall and perhaps belong to the end of the Bronze Age.

22. At Ringwold, halfway between Dover and Deal, below the floor of a tumulus, four cylindrical holes had been cut into the underlying chalk rock and each contained a large cinerary urn. One of these, Pl. XVIII, Fig. 5, was inverted over two smaller vessels, Pl. XVIII, Fig. 1, and among the ashes lay three ribbed heads of light green vitreous paste and a single bead of the same material and colour with a diameter of about 7 mm. Two of the urns were crushed, but the third is figured on Pl. XIX, Fig. 2. *Arch.*, vol. xlv, pp. 54–55.

23. In exploring Muttilow Hill, Cambridgeshire, near the southern end, and three feet from the surface, a cremated interment was discovered, and among the bones lay six ribbed beads, each of five segments, a bone pin and part of a bronze pin. The finder describes the beads as of pottery, but Dr. Thurnam in *Arch.*, vol. xliii, p. 495, mentions them under the heading "Glass." Close to the interment lay a small urn of no definite type, but in other parts of the barrow were four cinerary urns of overhanging rim type, Pl. XIX, Fig. 3. *Arch. Jour.*, ix, 227.

24. At Clayton Hill, Sussex, was found, probably with a cinerary interment, a small "slashed cup," Pl. XIX, Fig. 4, which contained an annular pendant of bright blue vitreous paste, of the same texture as Egyptian porcelain, with a loop for suspension. *Trans. Arch. Inst.*, 1853, p. 61.

25. A similar pendant from Oxsettle Bottom, Sussex, of greenish porcelain, resembling Egyptian porcelain, is figured, *Hor. Fer.*, Pl. XXV, 9. Green porcelain ribbed beads were found with it. *Arch.*, vol. xliii, p. 495. The pendant is now in the British Museum.

26. In a Yorkshire barrow Mr. Mortimer found two cinerary urns of overhanging rim type, Pl. XIX, Fig. 5, and with them nine jet or shale beads, more or less globular and two small beads, seemingly of a kind of vitreous paste. In the preface they are spoken of as double beads of vitreous paste. *Forty Years' Researches, etc.*, p. 169.

27. In a tumulus at Gilchorn, Arbroath, Forfarshire, was found a cinerary urn of overhanging rim type like Pl. XX, Fig. 1, an "incense cup," Pl. XX, Fig. 1A, a flint flake or knife, and a small, irregular oval whitish glass bead, partly opalescent. *P.S.A. Scot.*, xxv, 447–456. All these objects are preserved in the National Museum, Edinburgh.

28. In removing gravel from a mound near the mill of Marcus, Brechin, Forfarshire, two urns were disclosed. One of these was much broken, the other, Pl. XX, Fig. 2, contained a small ribbed bead of glazed greenish paste. *Op. cit.*, xxiv, pp. 470–1. These are now in the museum at Edinburgh.

Although no glass was found with the following nine interments, these are evidently contemporary with the twenty-eight that precede them, as they were accompanied by urns of overhanging rim type, by "expanded" and "slashed" cups or by bone tweezers, all of which we have already seen may be concomitants of glass beads or porcelain pendants. They also serve to enlarge slightly our knowledge of the civilisation of that particular period.

29. Upton Lovell "Golden barrow," Wilts: burnt human bones, with cylinders and plate of gold, lignite, amber beads, and "nodulated" cup like one from Avebury, Pl. XX, Fig. 3; two urns, bronze awl and dagger. (Devizes Mus., *Anc. Wilts*, i, 98, 99.)

30. Normanton group: a large barrow contained objects plated with gold and some set with amber, and a "slashed cup," Pl. XX, Fig. 4A. (*Anc. Wilts*, i, 201.)

31. Another large barrow of this group contained a skeleton with amber disc and pendants, gold-plated shale beads, "nodulated" cup and urn, Pl. XXI, Fig. 1. (Devizes Mus., *Anc. Wilts*, i, 202.)

32. Winterbourne Stoke group, Wilts: a barrow contained a burnt body in a coffin, a bronze dagger, and two pieces of bone with bronze rivets (probably the hilt), a smaller bronze dagger, pointed, and a pair of bone tweezers. (Devizes Mus., *Anc. Wilts*, i, 122.)

33. Normanton group, Wilts.: a barrow contained a burnt body in a coffin on the natural surface; cist contained bone tweezers and a bronze dagger, the sheath lined with linen. (Devizes Mus., *Anc Wilts*, i, 207.)

34. Aldbourne, Wilts: in centre of barrow, burnt bones with bone tweezers, bracer and oval pendant, both of stone. (*Arch.*, lii, 55, 56.)

35. Lord's Down, Dorset: central deposit of burnt bones, with bronze dagger, bone pin and tweezers (Dorchester Mus., *Celtic Tumuli*, i, 50).

36. Handley Hill, Dorset: cinerary urn, Pl. XXI, Fig. 2, inverted as secondary interment with bone tweezers. (Pitt Rivers, iv, 169.)

37. Camerton, Somerset: with cremated interment, an "expanded" cup, bronze dagger and pin with ornamented head (*Arch.*, xliii, Figs. 45, 157, 170; Evans, *op. cit.* Figs. 304, 456).

The principal facts that emerge from the above concise summary of thirty-seven interments are: (1) that though ribbed or notched beads were the commonest sort, yet the ordinary round beads were also known; (2) that these beads belong to a time when cremation was in vogue; (3) that the cinerary urns were frequently of the overhanging rim type: (4) that amber was fairly abundant; (5) that in twenty-one instances out of twenty-eight, the finds of glass were made in the south-west of England.

In a less direct manner it also appears that glass beads were contemporary (6) with stout bronze daggers up to 22 cm. in length, like Evans' (*op. cit.*, Figs. 302, 303); (7) with ornaments of gold of an unusual kind.

With regard to amber it is a notorious fact that this substance is not commonly encountered in the graves of Northern and Central Europe, nor in the terremare and pile-dwellings of Italy. It is not till the civilisation of Hallstatt and Villanova have emerged and iron has come into use that amber is found in an abundance which goes on increasing in the subsequent La Tène period. The same is true of glass beads. A few small pale blue beads of the Bronze Age have been found in

Denmark and Mecklenburg. A very few instances are known where glass beads have occurred in Germany with interments of the later Bronze Age. In several of the Swiss pile-dwellings of the same period beads of various colours have been discovered, but in no great quantity, and none in the pile-dwellings of Italy, though this country lies so much nearer to the sources of glass beads than Northern and Central Europe.

In Britain during the earlier Bronze Age amber is equally rare. With the forty-one beakers or drinking cups, contemporary with flint daggers, flat celts of bronze, and thin triangular bronze daggers, exhumed by Sir R. Hoare in Wilts, no amber was found; nor, with two exceptions—one in Yorkshire and one in Aberdeenshire—has it ever been observed with any vessels of this type. In the record of the numerous barrows of the Bronze Age explored by Bateman in Derbyshire and Staffordshire no mention is made of amber. Although Canon Greenwell and Mr. Mortimer have examined in Yorkshire hundreds of interments which cover the whole of the Bronze Age the former never found any amber at all and the latter explorer only on one occasion. But a small lump of amber is recorded to have been exhumed from a barrow at Huggate, in Yorkshire. An amber necklace was found round the neck of a contracted skeleton at Little Cressingham in Norfolk; a very few finds of amber with interments are known from Dorset; and two amber cups, both of which seem to have been turned on a lathe, were taken from barrows at Hove in Sussex and Clandown in Dorset. With the first of these interments was a stone axe and a bronze dagger; with the second a bronze dagger and an urn of overhanging rim type. There may be also a few other instances of amber occurring in Bronze Age interments, of which I have not heard.

On the mainland of Scotland, with the above exception, there is no record of amber being noticed with any Bronze Age interment. But at Huntiscarth in Orkney, some angular pieces of amber and four gold discs were found in a cist under a tumulus. (*P.S.A.S.*, iii, 195.)

Amber beads have several times been found with hoards of bronze implements, both in England and Scotland, all or most of which belong to the later Bronze Age.

It appears that Wilts held at one period quite a peculiar position. It attracted to itself, as a magnet attracts steel filings, nearly all the glass and amber that came to Britain. For the absence of unworked pieces of amber in Wilts, and the scarcity of amber finds with interments in other parts of Britain during the whole Bronze Age, makes it probable that most of the amber found in this county was imported at the same time as the glass beads and in some quantity. For in one grave, Hoare found upwards of 1,000 beads, in another 100, in a third 40; an abundance which has no parallel in other parts of Britain. And here it may be remarked that the Wilts beads are nearly all sub-globular and small, about the size of a hazel nut and some no larger than a pea, presenting a great contrast to the large globular beads, with a diameter of from 3 to 4 cm., such as were found at Magdalenberg, Adamsberg, and other places in Carinthia.

But with regard to sepulchral articles of bronze Wilts was nearly as poor as the rest of Britain. All that remains for determining the time of the importation of glass beads—for I think their introduction from abroad will be granted—consists of the stout bronze daggers and a bronze pin with a hollow head (interment 37). There is also the presumption that, judging from the analogy of what took place on the Continent, the trade of beads in Britain cannot well be dated earlier than the Hallstatt period.

The bronze daggers and the pin have all the appearance of belonging to the pure Bronze Age of Central Europe, though to the later part of it. Pins of the same type as the above are very common in the later Bronze Age stations of Auvernier, Cortaillod, and Corcellettes on Lake Neuchatel. But an isolated example like the above must have been imported or copied from an imported one, and that would imply considerable retardation before its arrival in Britain.

It has to be taken into account that Britain lay entirely off the main currents of civilization that traversed the Continent from south to north and *vice versâ*. So much so that iron, which was known in Italy and Central Europe *c.* 1200–1100 B.C., did not reach our island till about 400 B.C., and only a very few of the bronze fibulæ of the earlier Iron period, and these not the oldest, penetrated so far. This retardation of 800 to 700 years gives a measure of the remoteness and inaccessibility of the British coast. It is evident there could have been no regular trade between Central Europe and Britain; no direct consignments of goods were made to it from the centres of manufacture on the Continent. Whatever reached its sequestered shores from distant places must have been the result of accident and driftage. The only direct trade it had would be with the adjacent people on the other side of the Channel. They, too, from their remote position, were unable to furnish much in the way of bronze, but they were able to do a little trade in small amber beads, and perhaps in ribbed or notched beads of vitreous paste, far less attractive than most of the glass beads that circulated on the Continent. Hence it came about that stone perforated axes and stout bronze daggers were used in Britain long after they had been discarded in Central Europe, for the few bronze swords, spear-heads, etc., of the Bronze Age and Hallstatt Period, that first filtered in driblets into the country, and were then reproduced with variations by native smiths, were too precious to be laid by for ever in a grave, even at the end of the Bronze Age in Britain. And in some large cemeteries of the Early Iron Age, such as Sta. Lucia near Tolmino, hardly any weapons were found.

Although bronze swords and weapons, other than daggers, are not found in graves that are certainly contemporary with notched and other glass beads; and although it is perfectly logical to argue that their absence from graves of this period supposes, if it does not actually prove, their non-existence at that period, there is good reason to believe that bronze weapons and instruments, other than daggers, were contemporary with the glass beads. There is a find in the county of Clackmannan which helps to surmount this difficulty by bringing a cinerary urn of overhanging rim type indirectly into touch with socketed celts, gouges, spear-heads, swords and other objects.

In making a road at Alloa a small cemetery, of twenty-two cinerary urns, was exposed, of which only one of the overhanging rim type is preserved, Pl. XXI, Fig. 3. There was one unburnt burial among the group close to this urn, and on the stone cover of the cist which contained the skeleton were two penannular armlets of gold with slightly expanded ends, Pl. XXII, Fig. 1. Anderson, *Bronze and Stone Ages*, pp. 62, 63.

Two bronze bracelets, Pl. XXII, Fig. 2, of the same type as the above, are known from Achtertyre, Morayshire. They were found with two socketed spear-heads (Evans, *op. cit.* Fig. 383) and a socketed celt: also portions of metal rings of soft solder of tin and lead, nearly in the proportion of 4: 1. (Anderson, *op. cit.*, p. 146.)

Other bracelets of the same type come from the hoard of Balmashanner, Forfar. Among the objects were eleven penannular bracelets of bronze, Pl. XXII, Fig. 3, three circular rings of bronze, two broken rings, one of bronze, the other apparently of *iron*, over 3·2 cm. in diameter, one celt with an oval socket and loop at the side; four penannular gold rings of triangular section formed of six pieces soldered together, the same as in Evans, *op. cit.*, Fig. 489; and, it should be remarked, twenty-eight amber beads. *P.S.A. Scot.*, xxvi, 182–5.

These hollow rings of triangular section connect this hoard with the Heathery Burn hoard in Yorkshire and with another from the West Highlands. In this last was a penannular gold armlet, Pl. XXII, Fig. 4, with expanded ends quite like those on a gold bracelet of La Gorgé Meillet of the La Tène period. (*Matériaux*, vol. 15, p. 198, Fig. 43.)

Another bronze bracelet with expanded ends, Pl. XXII, Fig. 5, is part of a hoard from Monadhmor, Perthshire, consisting of a socketed spear-head, socketed celts, a socketed gouge, nine plain rings of different diameters and a circular hollow ring 7 cm. in diameter (*P.S.A.S.*, xvi, 27–31). Two exactly similar rings (Evans, *op. cit.*, Fig. 500) were found in Edinburgh with a disc-headed pin (*op. cit.*, Fig. 464) and a bronze sword of earlier Hallstatt type (*op. cit.*, Fig. 353).

Perhaps it will be objected that it is not quite certain that the skeleton burial and the burnt interments at Alloa are contemporary and that the cinerary urn may be earlier than the gold armlets. In reply to this, may be adduced a bronzed blade or razor, like one figured by Evans (*op. cit.*, Fig. 268), found at Shanwell, Kinross-shire, with the cinerary urn, Pl. XXI, Fig. 4, of nearly the same type as the Alloa example, but rather later as it shows transition to the cordoned type (*P.S.A.S.*, xix, 115–117). Another blade of exactly the same type was found with an urn, Pl. XXI, Fig. 5, of the overhanging rim type. They came from a small cemetery near Musselburgh, Edinburgh (*P.S.A.S.*, xvi, 419–429). Several blades of this type, all of them enriched with engraved geometrical designs, are known in Scotland, and two are figured in Evans (*op. cit.*, Figs. 262, 267), who compares them with a very similar, but plain blade, found with a hoard of bronze objects at Taunton.

Among these objects is a torque with hook-ends like one from West Buckland (*op. cit.*, Fig. 468). Torques with similar hook-ends, and most of those in Great Britain terminate in that way, may belong in France to the Hallstatt period (*Matér.*, 14, p. 114, Pl. (14); and p. 485, Fig. 171). It may therefore be inferred that the difference of time between the skeleton and the cremated interments in the Alloa cemetery is unimportant and that both belong to the same period.

It has been amply proved that the vitreous beads, both the long ribbed and the globular, were imported into Britain at a time when cinerary urns of Thurnam's " overhanging rim " type were in use both in North and South Britain. As the type is diffused very abundantly over England, Scotland, and the eastern half of Ireland, it must have lasted a long time, for no other type of pottery covers so extensive an area. But at this particular period the type was no longer at its prime. The earlier examples present a very well-marked, nearly angular shoulder with a neck that sometimes exhibits an inward curve. In the example here figured, the angular shoulder is beginning to disappear or to develop a raised moulding below the shoulder, as in Pl. XXI, Fig. 4, which leads up to a new type. The very slight shoulder on the Muttilow urn, Pl. XIX, Fig. 3, and the absence of any on those from Ringwold, Pl. XVIII, Fig. 5, Pl. XIX, Fig. 2, show that both these interments from the east of England are later than those from Wilts in the west.

During the above period three new types of ceramic came into existence, termed by Thurnam the "expanded," the "nodulated," and the "slashed" cup. They are confined to the south west of England and almost to the limited area of Wilts. The "slashed cup," Pl. XIX, Fig. 4, found with one of the two porcelain pendants from Sussex, is sufficiently similar to Plate XX, Fig. 4A, known as the "Stonehenge cup," to allow us to attribute these ornaments to the same period as the vitreous beads.

Lastly, the overhanging rim type of pottery, at a time when it is no longer at its prime, has been found to be contemporary with gold and bronze armlets with slightly expanded ends. These ornaments appear to correspond in time with the Hallstatt period of the Continent, as more advanced and perfected examples like the armlet from the West Highlands, Pl. XXII, Fig. 4, approach the level of the La Tène period. Through these armlets it may be inferred that this type of pottery is also contemporary with certain socketed celts, gouges, bifid razors, and certain bronze pins, swords and spear-heads of the latest types.

Taking everything above into consideration, I conclude that the importation of these long and globular beads of vitreous material into Britain coincides with part of the Hallstatt period of Central Europe and may be placed approximately between 900 or 800–600 B.C. How the beads reached this country and by what stages can at present be only a matter of conjecture.

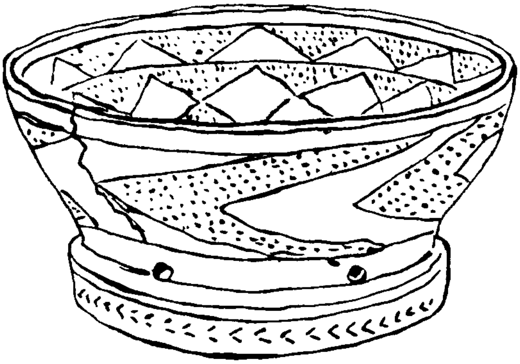


Fig. 1.

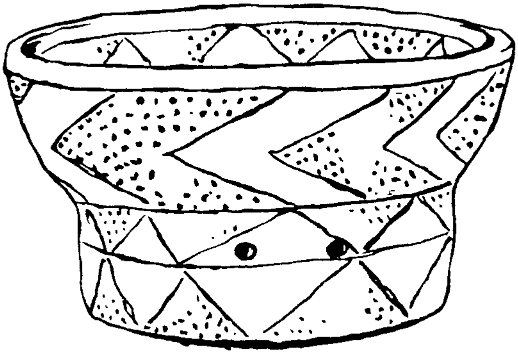


Fig. 2.

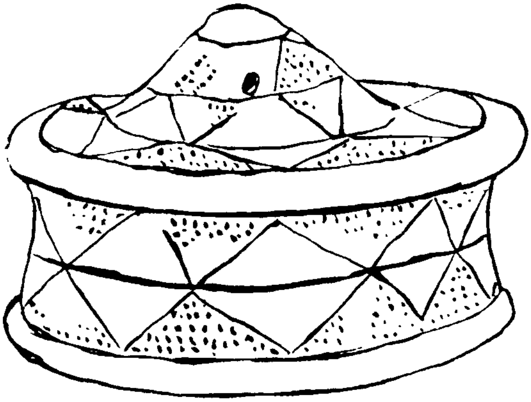


Fig. 3.

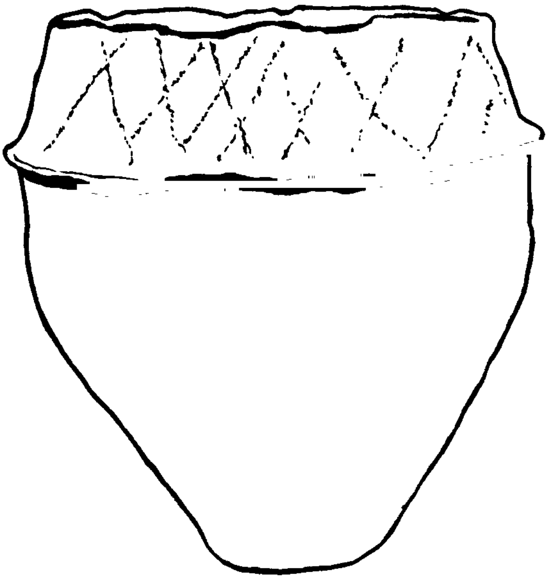


Fig. 4.

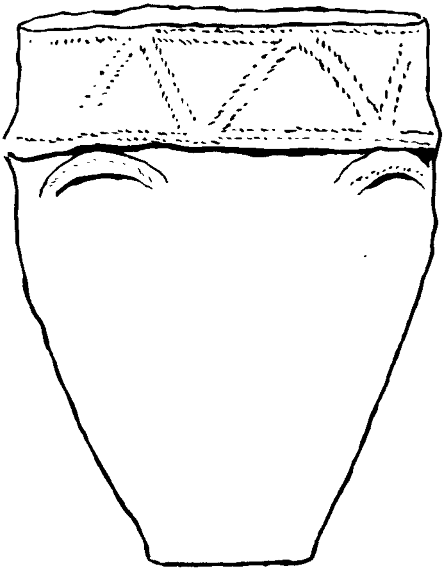


Fig. 5.

THE CHRONOLOGY OF PREHISTORIC GLASS BEADS.

Journal of the Anthropological Institute, Vol. XXXV, 1905, *Plate XIX*.

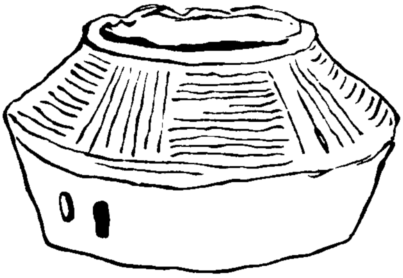


Fig. 1.

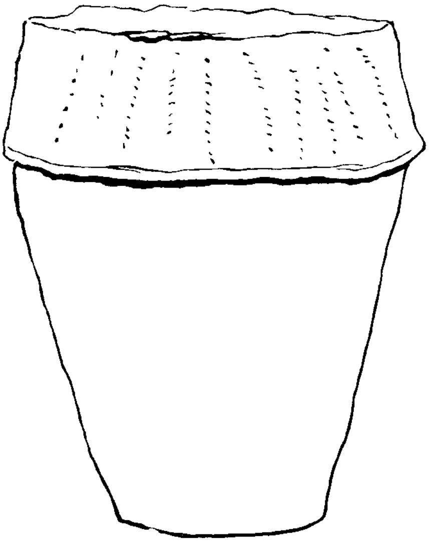


Fig. 2.

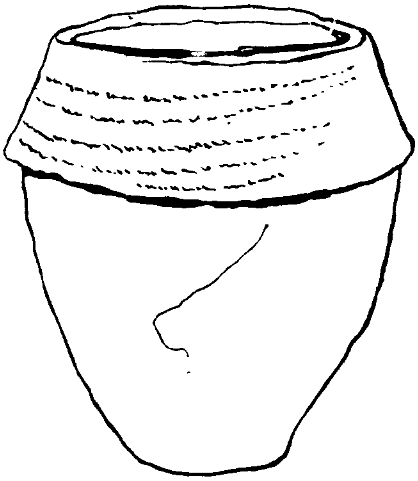


Fig. 3.

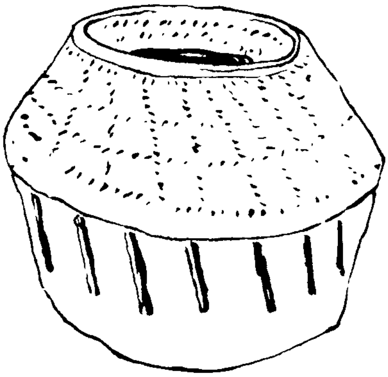


Fig. 4.

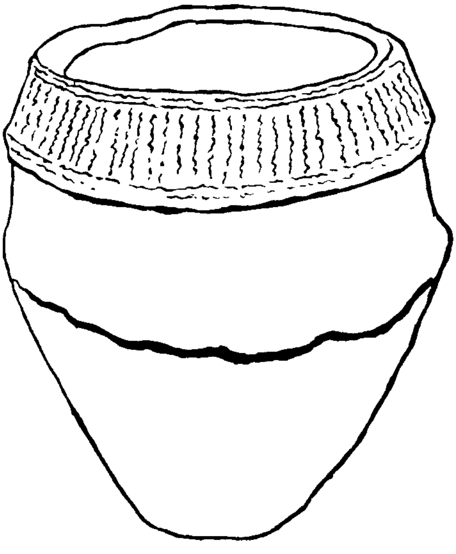


Fig. 5.

THE CHRONOLOGY OF PREHISTORIC GLASS BEADS.

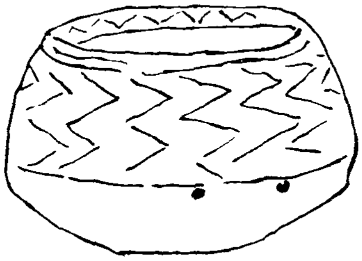


FIG. 1A.

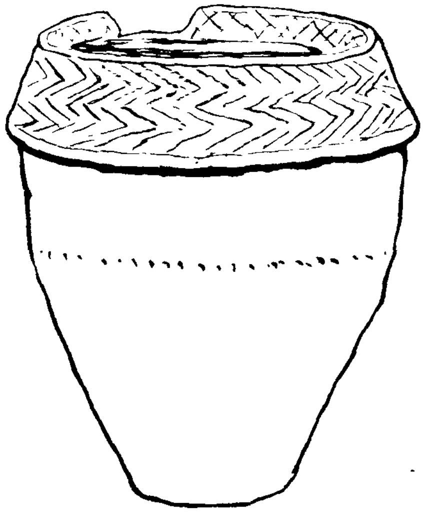


FIG. 1.

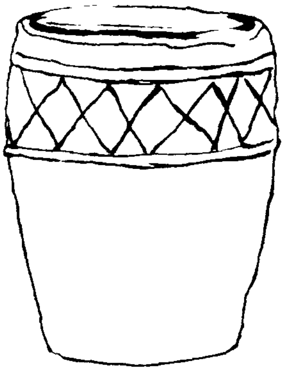


FIG. 2.

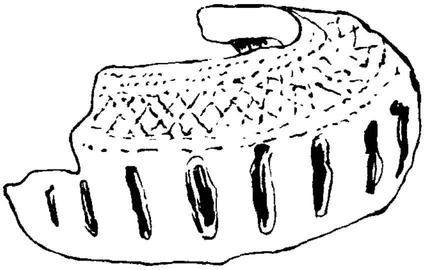


FIG. 4A.

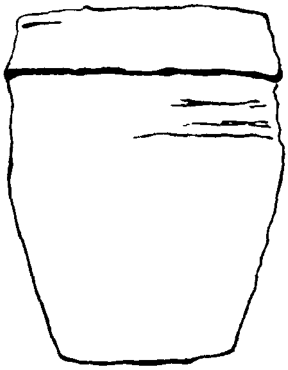


FIG. 4.

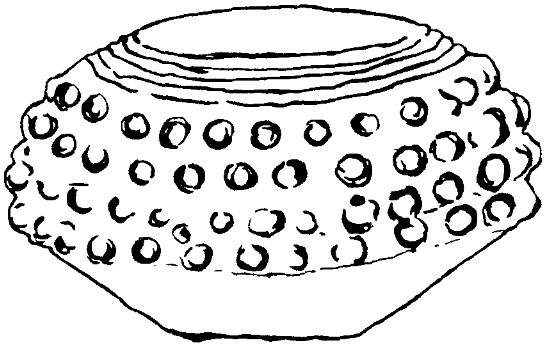


FIG 3.

THE CHRONOLOGY OF PREHISTORIC GLASS BEADS.

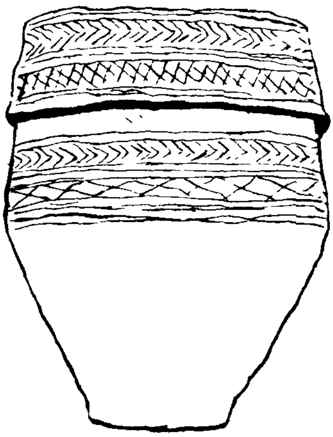


FIG. 1

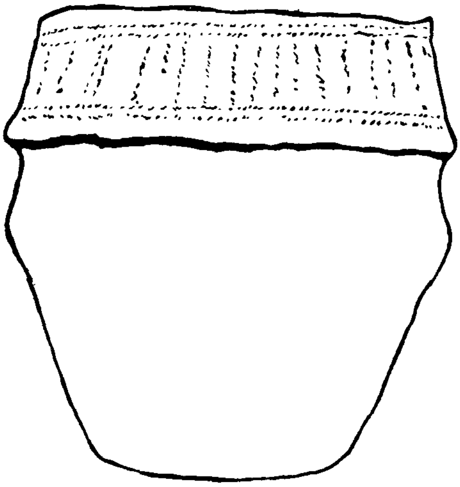


FIG. 2.

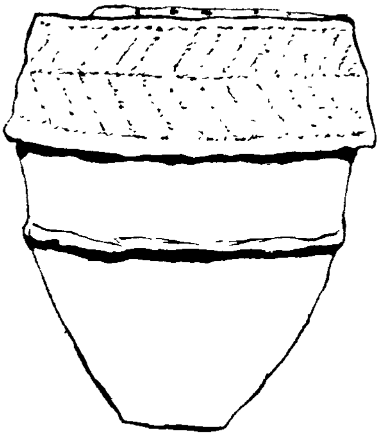


FIG. 3.

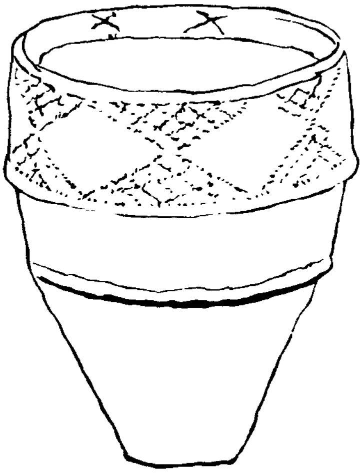
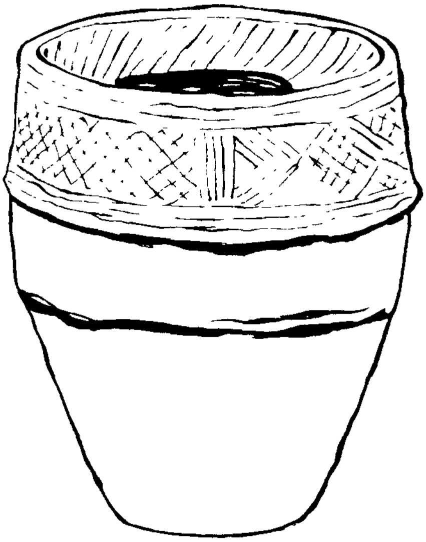


FIG. 4.



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THE CHRONOLOGY OF PREHISTORIC GLASS BEADS.

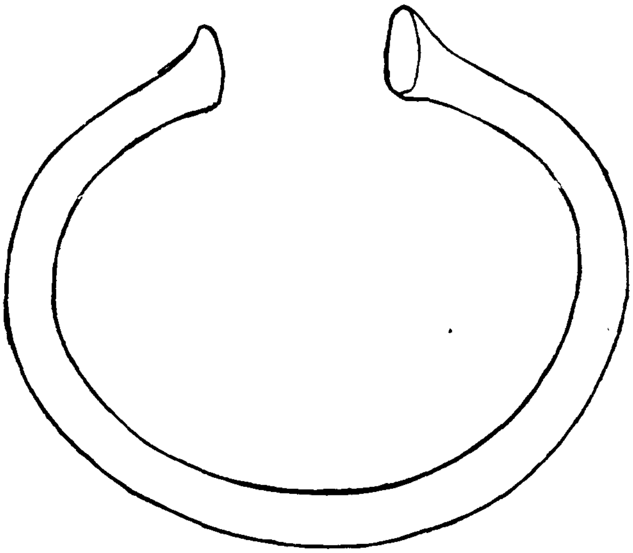

FIG. 1.

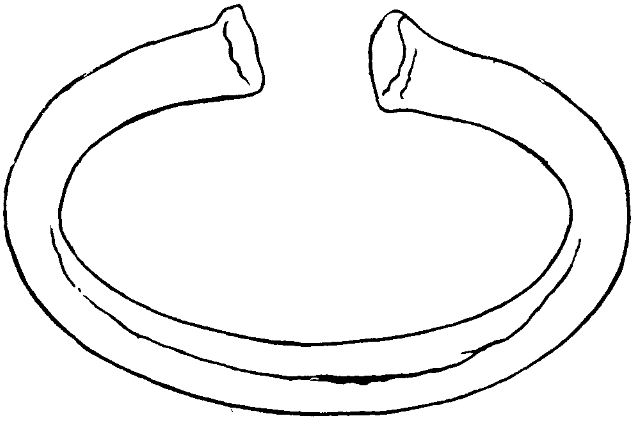

FIG. 2.

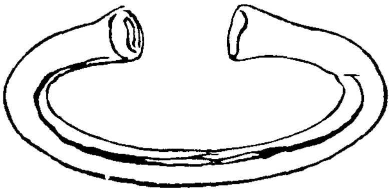

FIG. 3.

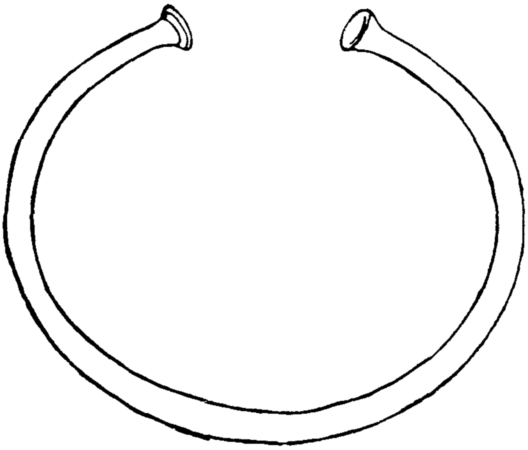

FIG. 4.

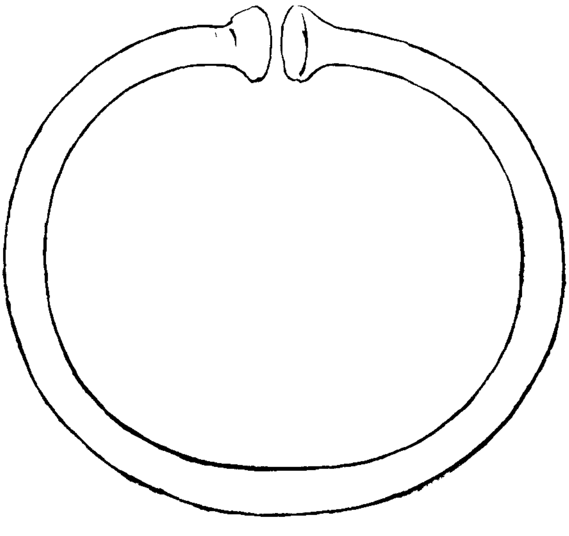

FIG. 5.

THE CHRONOLOGY OF PREHISTORIC GLASS BEADS.

Explanation of Plates.

Plate XVIII,	Fig. 1,	Interm. 14.	Beckhampton.	Scale $\frac{2}{3}$.	*Arch.*, v, 43, p. 64.
„ „	„ 2,	„ 15.	Aldbourne.	Scale $\frac{2}{3}$.	*Arch.*, v, 52, p. 51.
„ „	„ 3,	„ 15.	„	„ „	„
„ „	„ 4,	„ 19.	Bloxworth Down, Dorset.	Height, $49\frac{1}{2}$ cm.	
„ „	„ 5,	„ 22.	Ringwold.	Height, $40\frac{1}{2}$ cm.	*Arch. Cant.*, ix, 23.
„ XIX,	„ 1,	„ 22.	„	„ 5·7 cm.	„ „
„ „	„ 2,	„ 22.	„	„ $45\frac{1}{2}$ cm.	„ „
„ „	„ 3,	„ 23.	Muttilow.	„ $23\frac{1}{2}$ cm.	*Arch. Journ.*, ix, opp. p. 229.
„ „	„ 4,	„ 24.	Clayton Hill.	„	*Arch.*, v, 43, p. 367.
„ „	„ 5,	„ 26.	Calais Wold.	„ 46·2 cm.	40 *years, etc.*, Pl. LIV.
„ XX,	„ 1,	„ 27.	Gilchorn.	„ $37\frac{1}{2}$ cm.	*P.S.A.Scot.*, xxv, p. 449.
„ „	„ 1A,	„ 27.	„	„ 5·7 cm.	„ „
„ „	„ 2,	„ 28.	Mill of Marcus	„ 16 cm.	*P.S.A.Scot.*, xxiv, p. 471.
„ „	„ 3,	„ 29.	Avebury.	Scale $\frac{2}{3}$.	*Arch.*, vol. 43, p. 364.
„ „	„ 4,	„ 29.	Upton Lovel.	Height, 15·2 cm.	
„ „	„ 4A,	„ 30.	Normanton.	„ $3\frac{1}{2}$ cm.	
„ XXI,	„ 1,	„ 31.	„	„ $21\frac{1}{2}$ cm.	
„ „	„ 2,	„ 36.	Handly Hill.	„ $36\frac{1}{2}$ cm.	
„ „	„ 3,		Alloa.	Height, 31·7 cm.	
„ „	„ 4,		Shanwell.	Height, $35\frac{1}{2}$ cm.	
„ „	„ 5,		Magdalen Bridge.	Height, $30\frac{1}{2}$ cm.	
„ XXII,	„ 1,		Alloa.	Scale $\frac{1}{1}$.	
„ „	„ 2,		Achtertyre.	Scale $\frac{1}{1}$.	
„ „	„ 3,		Balmashanner.	Scale $\frac{1}{1}$.	
„ „	„ 4,		West Highlands.	Scale $\frac{1}{1}$.	
„ „	„ 5,		Monadhmor.	Scale $\frac{1}{1}$.	

MAGATO AND HIS TRIBE.[1]

BY WILLIAM GRANT.

MAGATO in 1894 was a compactly built man, about fifty years of age, with a beard fast turning grey. He had a quiet, thoughtful expression, giving the idea of solidity and conservatism. In height he was about 5 feet 8 inches, slightly corpulent. He looked a little distressed, which I attributed to a severe cold on his chest, from which he was undoubtedly suffering. His breathing was far from easy, and at short intervals he coughed and expectorated freely. Among the Zulu such discharge is invariably removed with a small broom made of grass, but on this occasion the hand of an attendant did duty for the broom, and two *incekus* (attendants) appeared to vie with each other as to who should first render the willing service of rubbing into the ground. During the act of coughing, every man present reverently bowed his head, noiselessly clapped his hands, and in a low tone of voice repeatedly uttered the expression, *Entowoo tobela,* meaning *the lion has done it.* It is doubtless in consequence of this tribal salute offered the chief by every man and woman approaching him, viz: *Entowoo, i.e.* "Lion," that Magato received from Europeans the appellation of "Lion of the North."

Several hours were spent in discussing the details of my special mission, and as I felt a curiosity, which was aroused by several tribal distinctions which arrested my attention, I requested an old, intelligent member of the tribe to visit me, with the object of eliciting some facts bearing on the origin, language, custom, and manners of the tribe, to which attaches no small amount of curiosity and interest.

The tribe known as Mavenda, of which Magato at the time of my visit was the head, appears to be one of the oldest, if not the oldest, tribe known in the Transvaal.

So far as modern times are concerned, the Mavenda had their origin south of the Limpopo, at a small hill named Tyelele. Their early chiefs are buried there, and the enclosure known among the Zulu as *Makosin, i.e.,* burying place of the kings, is visible to-day, and consists of flat stones, which were collected on the various surrounding hills.

Among the older men an idea obtains that the earlier origin of the tribe connects with a place far north of the Limpopo, for on festive occasions, when references are invariably made to early ancestors, they shout "Heigh, heigh, Makalaka!"

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[1] This paper refers to a visit made to the tribe before 1894. The tribe is the same as that referred to in Mr. Gottschling's paper, p. 365. The different accounts given by the missionary stationed among the tribe, and a stranger visiting it just before the Mawenda war with the Boers, which resulted in its subjugation, are worth comparison.—[ED

The first chief of whom I could get any trace was named Matipa, who was the father of Monyetsoopen, who was the father of Ndhlokonhlovo, who was the father of Umpofu, who was the father of Mablaan, who was the father of Magato.

Mablaan seems to have had a wide repute, and was held in considerable reverence by other tribes, as he was credited with the power of rain-making—a greater power in the eyes of natives than that of the assegai. He was constantly importuned by other chiefs to exercise his power, and was the recipient of presents of considerable value, consisting of girls, oxen, and red and green beads which were obtained from the Portuguese.

Mablaan died at the back of a prominent hill on the Zoutpansberg range, known as Pisankop, but his remains were removed and interred at a spot situated below the present site occupied by Magato.

Like all South African tribes, the Mavenda, in consequence of internal differences, have become divided, though not to any considerable extent. The tribe at present under the chief Siwaas, adjoins that of Magato, and split off from the Mavenda proper in the time of Umpofu. This tribe is said to be numerically nearly as strong as that of Magato.

Another small tribe, now located south of the Limpopo, called by the natives Bepe, is also an offshoot from the same tribe; the present chief is named Matoowan, called by the same name as his father. This tribe is insignificant in numbers and influence. Siwaas and the smaller tribe of the Matoowan's appear, therefore, to be the only two tribes allied to Magato's, who speak an identical language.

The Mavenda language is neither Basuto, Zulu or Makatise, though there is a decided affinity in all three,—a considerable number with whom I conversed distinctly understood Zulu and anyone possessing a thorough knowledge of Zulu would in a reasonable time acquire a knowledge of Mavenda. In the long list of queries put by me, I said, "Does the Mavenda language ally to the Basutu, Zulu, or Makatise?" The reply was a decided "No." I then said, "What would you reply if asked what language you talk?" The instant answer was, "Our own."

From the limited observation I was able to compress into a few days' visit, I incline to the opinion that the Mavenda language is the most difficult I have yet met, and even to me, whose tongue and ear are familiar with native languages, is by no means easy to acquire.

The large extent of the tribe was due to the constant accession to their numbers from subordinate tribes who recognised Magato as the paramount chief. The idea of thus enlarging the influence of Magato was said to be due to his redoubtable commander-in-chief Tromp, who himself having undergone the rite of circumcision, resolved during the lifetime of Mablaan, and while Magato was still a youth, to induce the then chief of the tribe to undergo a similar rite. This was determined on with a view of attracting to Magato other smaller tribes who were known to be circumcised, and the arrangements were undertaken by Tromp without the knowledge of Mablaan, who was uncircumcised.

Magato was quietly secluded for a time, and having undergone the operation, the fact was in due course reported to his father. Mablaan was greatly enraged, and threatened his life. Magato, however, was carefully secreted until his father's rage had subsided, when he again appeared as usual. Prior to making the personal acquaintance of the chief and tribe, I had been informed that the rite of circumcision had long obtained among them. I therefore made the most particular inquiries, and the facts as stated are reliable, for it was reiterated that Mablaan had never been subjected to the rite, and that Magato was the first chief of the tribe to adopt it. Now an uncircumcised person is looked upon by Magato and his indunas—all of whom are circumcised—as unclean. They are termed Mashooburu. Those who are circumcised are called *uwhela wirikan*, though generally spoken of as *Amasoka.*

At any gathering, or on the occasion of any public function, there is a complete separation, and they will not eat together. It is, however, somewhat peculiar that a man who is "Sokiwe" will partake of the flesh of game from a "Mashooburu," while he will altogether decline to accept at his hands the flesh of any domestic animal, whether cattle, sheep, or goat.

The period for undergoing the rite of circumcision is not at all uniform, some being subjected to it while young—say ten or fourteen years—and others after reaching manhood. The time of celebration is fixed by the chief, and all who are about to undergo the ceremony leave their homes and assemble in the veld. The only protection they have consists of the most flimsy structures, constructed of the branches of trees. During the period of confinement the inmates are subjected not only to considerable exposure in a perfectly nude condition, but also to treatment of a very harsh nature. The number thus collected are kept together for a period of three or four months. If any succumb, as frequently happens, they are considered unfit for manhood, and there are no particular regrets; the "fittest" being the individual who can stand the greatest amount of physical hardship All the inmates of this enclosure are placed in charge of a considerable number of responsible headmen—Amasoka. These act as instructors, and considerable time is spent in instilling into the youthful mind sound principles for their future guidance. They are warned against certain wrong and vicious habits, and encouraged to be faithful and loyal subjects to their chief, and to be good husbands and fathers. The gathering is known among the natives as "School," a term probably adopted since the advent among them of missionaries. Food is prepared for the inmates at their several homes, and often carried a considerable distance and placed in proximity to the enclosure, when it is fetched by carriers from the enclosure. No stranger or "Mashooburu" is allowed to approach under penalty of death.

The individual selected as operator is chosen by the chief in council. He is not a member of, or considered as belonging to, any particular order, but is generally chosen for his robust health. His name is never mentioned by any member of the tribe, the punishment for such an offence being death. In physique and bearing the Mavenda are distinctly inferior to the Zulu race; and in the principles of hygiene they are very far behind them.

At the time of my visit vegetation was at its rankest point, coarse grass and scrub were luxuriantly growing within two feet of the doors; no attempt had been made to form paths, and wherever the eye rested, heaps of *débris* and rubbish were to be seen, the whole presenting a dismal picture of unmitigated squalor. Nothing but the extreme healthiness of the position and climate could, under such conditions, avert an epidemic of fever. The huts are circular in shape, built after the well-known Basutu type; the walls, about 9 inches thick, are sometimes constructed of wattles and plaster, the better ones being built of green brick, sunburnt. The interiors of the huts are usually ornamented with red and white clay, a very favourite design corresponding in shape to a sugar loaf. The roof is invariably constructed of bush poles and thatch, and projects some 3 feet over the walls, forming a verandah, which affords protection from rain and sun. By a European the huts would be pronounced more comfortable than the bee-hive-shaped Zulu hut, if only from the fact that the door of the Mavenda hut can be entered by simply stooping slightly; while a Zulu hut can only be entered on the hands and knees, an attitude which brings the visitor into a much closer contact with mother earth than is desirable.

The Mavenda slaughter cattle and sheep in the manner adopted by South African natives generally, *i.e.*, the former are stabbed with an assegai behind the fore-leg, and the latter killed by severing the wind-pipe. A custom altogether novel to me, however, obtains in the killing of goats. The victim is seized and firmly held; the man, who *pro tem.* fills the office of butcher, then proceeds to make a slit under the tail of the animal. The tail is then skinned while the animal is alive; it is then cut off and thrown away. The next operation is a cutting out of a portion of the lower gut; the final act being the cutting of the poor animal's throat, which terminates its misery.

The social and domestic code which obtains amongst this tribe is of the loosest kind imaginable, and stands out in strong contradistinction to that which was enforced among the Zulu, prior to the advent of British rule in Zululand. At the time I visited Magato, a case in point had just occurred. One of his most prominent indunas had been guilty of a misdemeanour with the wife of an induna of equally prominent rank. In the whole of my experience among Zulu a similar case had never once come under my notice, and had it occurred, the crime would have been expiated by death. In connection with the case in point, a fine only, of 14 head of cattle, was imposed, and the induna sent to Coventry for a month or so. His short term of banishment from the chief terminated only a few days prior to my arrival, and I found him in office discharging his accustomed duties. The crime of seduction I found to be of common occurrence, and the explanation was not far to seek, when I was informed that the penalty for this offence never exceeded seven head of cattle. I asked, "Is the fine of seven head never exceeded in cases of men of rank?" The reply was, "No, we stop at seven because the fore-finger is used to beckon with."

For the benefit of readers who are unfamiliar with the native mode of counting, I may say that numbers commence with the little finger, which, when elevated, indicates one; but in elevating the thumb only, the number indicated is six, and the four fingers and thumb of the other hand may be entirely out of sight. In elevating, therefore, a thumb and fore-finger only, the number meant is seven; so, as it is alleged that the fore-finger is used to beckon with, this was the reason assigned for limiting the fine to seven head of cattle.

I had been informed, prior to my visit, that I should discover among this tribe the remnants, at all events, of certain religious rites, and that an order obtained among them corresponding in some respects to an ancient priesthood. I confess, however, although my curiosity had been thoroughly aroused, and I was thus prompted to make the most careful inquiries, I was unable to discover the least trace of any such thing. On the contrary, it appeared to me there existed a complete negation of everything that could be called a religious belief, and to a very much greater extent than is found among the Zulu, who at least have some vague and shadowy idea of a something "Unseen and Unknown."

In reply to the question, "Do you believe in the existence of a God?" the answer was, *Undobona linyi*, "Who has seen him?" Although the conclusion, or belief, is not reached by any process of mental or moral reasoning, they undoubtedly are materialists, for they assert that the *monya*, *i.e.*, "breath," or "spirit," goes into the grave with the body, and that constitutes the end of everything. Whether the Mavenda sacrifice to appease the spirits in case of illness or domestic calamity, as is the invariable case with Zulu, I did not ascertain; but, singularly enough, in the early spring of every year some twenty or thirty head of cattle are slain under the directions of the chief, when they pray for "peace, prosperity and plenty"; and so we find even among a people absolutely devoid of any idea of a hereafter, some vague and misty notions which connect with a spirit world.

I found a complete absence of all superstitious ideas regarding snakes, for they destroy every kind of snake with which they come in contact. In this they differ widely from the Zulu. The Zulu believe that the spirits of their kings after death inhabit the deadly Mamba, and that the *ihloze*, *i.e.*, spirit of their ancestors, inhabit snakes of a more innocent type. The appearance of a medium-sized green snake among the wattles of a kraal fence is always welcomed, and considered to be a visit from, or by, the spirits of their forefathers. The reptile receives the kindest treatment, and is in no way disturbed; consequently it does not object to a close inspection, as I have frequently experienced.

The system of *lobola*, *i.e.*, payment of a certain number of cattle by a bridegroom for his bride, which is a universal custom among South African native tribes, obtains also among the Mavenda. The number is determined by the father of the girl and the son-in-law elect, and varies according to the position of the contracting parties. In the event of marriage being sanctioned without the prior payment of cattle, then, in accordance with native law, the issue of the marriage becomes the property of the bride's father, until the number of cattle agreed upon have all been delivered.

HINDU PREGNANCY OBSERVANCES IN THE PUNJAB.

BY H. A. ROSE, Local Correspondent of the Anthropological Institute.

IN *Folk Lore*, vol. xiii, 1902, some notes on Unlucky Children (pp. 63–68), and Unlucky and Lucky children, and some Birth Superstitions (pp. 278–80) were published. At page 279 allusion was made to certain observances during pregnancy, and to the custom of re-marrying the parents in certain circumstances. The following notes deal in fuller detail with Hindu pregnancy rites, some of which appear to be relics of an old custom of re-marriage during the first pregnancy.

The first menstruation after marriage.

The first menstruation after the marriage has been consummated is the occasion of a strict *tabu* in Mandi. The wife must touch no one, and should not even see any one, to secure which she is shut up in a dark room. She must not use milk, oil or meat, and while she is still impure the following rite is performed:—On a day chosen as auspicious by a Brahman, all the wife's female relatives assemble, and kinswomen wash her head with *gondhana*. Then after she has bathed, five cakes of flour, walnuts and pomegranates are put in her lap, with a pretty child, in order that she too may bear such a child. Looking into its face she gives it some money and cakes, and then the family priest makes her worship Ganpatî. In return he receives a fee in money, with the things offered to the goddess. The women spend the ensuing night in singing.

If a woman's children all die, she procures, in the third month of her pregnancy, a piece of iron, taken out of a sunken boat, and from it has a ***karî*** or manacle made. This she wears on her right leg, and it is believed to prevent her future children's premature death. [Dera Ghâzî Khân District.]

In Fâzilkâ an observance, now nearly extinct, is observed by Hindu Aroras in the third month of a first pregnancy. It is called the *ánkh salâî*, because after it the wife ceases to apply antimony to her eyes. Her parents send her rice which is distributed among her kin.

In Siâlkoṭ the observance of the third month is called *thâknî*.[1] Dried dates and pieces of cocoanut are given to the wife, and of these she eats a little, the rest being distributed among her kinsmen. In Hoshiârpur a similar rite is observed; loaves of wheat flour fried in *ghî* are distributed among the brotherhood, and both husband and wife put on new clothes and worship the family god.

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[1] But in Gurdâspur the rite known as *thaṅknî* (clearly = *thâknî*) is said to be observed on the first day of the sixth month. The woman on this date washes her head with curd and puts on new clothes: saltish comestibles, such as *pâpaṛs*, *pakauras* and *sewian* or vermicelli, being distributed among the brotherhood. The *thaṅknî* is followed by the great *rît*, held early in the eighth month, which is a religious ceremony. The woman's parents send her presents, and she washes her head, etc., as in the *thaṅknî*. But a *paṇḍit* is called in and performs certain religious rites. The women of the family also sing certain ritual hymns, and the occasion is one of great rejoicing. *Pun-savan*, defined by Platts (*Hindustani Dictionary*, p. 270) to mean "causing the birth of a male child—the first of the essential ceremonies of Hindu initiation—held on the mother's first perceiving signs of a living conception," is now obsolete in the Simla hills. So, too, is the *sisant*, which used to be performed in the sixth month.

In the extreme south-east hardly any observances during pregnancy are reported, though in Hissâr the *kanjî* rite—described below—is in vogue in some parts. But elsewhere such observances are usual and somewhat elaborate. Thus in Jînd during a *first* pregnancy (*jêṭhâ hamal*) we find the *mîthâ bohiâ*,[1] a social ceremony, in which at the end of the third month a basket full of sweets is sent to the woman by her mother, with a suit and a half of clothes, and Rs. 5 in money. At the fifth month a second similar ceremony, the *sâḍh*,[2] is observed, the mother sending her daughter two and a half suits of clothes, one and a quarter maunds of sweetmeats, and Rs. 7.

During the seventh month occurs a rite of a religious character, called the *bîbîâṅ kâ bhôjôṅ bharnâ.* This consists in the woman's offering four and a quarter *sers* of rice to the *bîbîs* or spirits, in ten *thalis* or plates, of which one is given to a Ḍûmnî, another to a land-holder's wife, a third to the husband, a fourth being allotted to the woman herself, and the rest to other relatives.

The pregnancy rites, however, which are, strictly speaking, religious, are the *garbh sanskâr*, and foreshadow the *janm, mûṇḍan* and *janeo sanskârs*[3] or rites at birth, (first) tonsure and initiation, which will be described in due course.

The *garbh sanskâr* includes two distinct rites, the *chhotî* or lesser, and the *barî rîtân* or greater rites, which are observed in the fifth and seventh months, respectively, of the pregnancy throughout the Central Punjab.[4] In the former the woman bathes, her hair is plaited and she is dressed in clothes presented by her parents. Her neighbours and kinswomen also assemble to sing songs and fill her lap with grain and cakes made of grain flour fried in *ghî.* Her mother-in-law is also congratulated, and similar eatables distributed among the husband's brotherhood.

At the commencement of the seventh month the husband's parents celebrate the *barî rîtân*; but first of all the wife's parents send her a new *tewar*,[5] a cocoanut, dried dates and money, together with a present of clothes to her husband's parents, who on their part present her with new clothes. On a lucky day chosen by the Brahman, the husband and wife, dressed in new clothes, sit side by side and revere images of the gods drawn by the Brahman on the floor. The husband's mother then places a cocoanut and dried dates in the wife's lap, and congratulations are exchanged. Huge loaves of flour fried in *ghî* are then distributed among the brotherhood.

[1] *Miṭṭhâ* "sweet": *bohiâ* is not traceable in the dictionaries. [2] *Sâdh*, s.f. lit. "a half."

[3] To these four *sanskârs* should apparently be added a fifth, the *nâm karn* or naming, which precedes the *mûṇḍan.*

[4] *e.g.*, by the Lahoria Khatris, but the Bunjâhî Khatris are said only to observe the *barî rîtân.*

[5] *Tewar*, or *tewr*, three articles of clothing; a trousseau consisting of a gown, shawls and shift (*ghagri*, *dopaṭṭa* and *kurṭa*). The *bewr* consists of two articles only.

In Ferozepore these rites are replaced by the *jâṛ bharnekî* and *bhôj bharnekî* observances. Of these the former simply consists in making *kachchi pinni*[1] or rolls, of which two are marked with saffron and given to the wife, who either eats them or divides them among young girls and the brotherhood. The second rite is, however, far more elaborate. The wife's parents send her a double *tewar*, with a shawl and turban for the husband, and other things. Then, on the day of the new moon, the wife visits each member of the brotherhood in her house, and gives him some rice as a summons to the rite. Before the kinswomen assemble a corner of the eastern wall of the house is plastered, and seven hand marks made on it with rice-flour mixed in water. A wooden plank is also set up before the wall and a lamp lighted. The kinswomen bring with them some of the grain and rice given them the previous day, and scatter the rice near the lamp, piling the grain in a heap close to it. The plates are then put in one place; twenty-two *sers khâm* of rice are then boiled, with five of sugar and two and one-half of *ghi*, the mixture being divided in precisely equal portions on the plates among the kinswomen, who object if one gets more than another. The idea, doubtless, is to convey equal fertility to all.

The clothes presented by the wife's parents are next put on her, and her skirt tied to that of an unmarried kinsman. The pair then walk round the plates seven times, and are asked to bow to the lamp. It is believed that the boy will thus soon be himself married. Their skirts are then untied.

A vessel is now placed in the wife's hands and each kinswoman gives her a little rice from their plates, which she eats. Her husband's mother is then congratulated. The grain brought by the kinswoman is shared equally by the Maihra (? waterman), and her Brahman priest.

Mid-pregnancy.

It is clear that the *chhôtî rîtân* are observed at or about the time when half the period of gestation has elapsed, and indeed the rite is called the *adh-gabh* in Amritsár,[2] Gûjrânwâlâ, and in Bahâwalpur. In Hoshiârpur it is not known by that name, but it is observed on the second evening of the lunar month in the fifth month of pregnancy,[3] and a second rite corresponding to it is held on the second day of the ninth lunar month. In Jhelum it is observed on an auspicious day in the fourth or fifth month. The wife bathes, and is dressed in new clothes, her hair is plaited and her hands stained with henna. Her kinswomen sing songs throughout the night. All this is supposed to prevent miscarriage. Her parents also send her some sweets which are put in her lap. In Siâlkot the *adh-gabh* is also said to be observed, but not by the Jaṭs, and is described as simply consisting in the distribution of *pâpars, pakauras,* etc., among the brotherhood.

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[1] The *pinni* are made in the following proportions, rice flour 5¼ *sers*, sugar 2½, and *ghi* 1 *ser*.

[2] But Bânias, who come from the south-east, do not observe the *adh-gabh*. One account says it is observed in different ways, "by all sects of Brahmins and Hindus"; another, that it is called *rît* and is observed, in different ways, by Brahmins, Mahâjans, Khatrîs, Sunârs and Jhîwars, but *not* by Jaṭs; while a third alleges that the *adh-gabh* is performed in different ways, but on the same principle, by all Hindus; whereas the *kanjî* is confined to Brahmans, Khatrîs and Aroṛas. In Ajnâla it is said not to be observed at all.

[3] In Hoshiârpur the wife's parents send her a piece of red *sâlû* and some rice. She bathes and puts on the *sâlû*. Rice is also distributed among the brotherhood.

In Siâlkoṭ the mid-pregnancy rite is called the *paoṅ bhârî* or the "heavy feet."

The seventh month: kanjî.

Corresponding again to the *barî rîtân,* described above, is the *kanjî,*[1] which is usually observed in the seventh month, though sometimes postponed to the ninth. It is very generally observed, except in the extreme south-east, but it varies in details and often bears no distinctive name.

In Hissâr it is observed in the seventh or ninth month, and among the Bâgrîs the wife's parents send clothes for herself and her husband.

In Hoshiârpur this ceremony is called *rît,* and is observed on the first of the lunar month (seventh or eighth). The present wife's parents send her ten to twenty loaves fried in *ghî, pâpars* and *pakauras,* clothes for herself, and her husband, one or two ornaments, and from one to seven Rs. in cash. Food is also distributed to the brotherhood and menials, Brahmans being also fed in the name of ancestors. In some places the wife's parents feed Brahmans, giving them wheat-flour and *karî.*[2] Or again the wife's parents send her clothes and money, after which she bathes, and then both she and her husband pray that the child may be a boy.

In Amritsar the *kanjî* is observed in the seventh or ninth month, by all castes but not in all parts of the District. In Ajnâla it is called *rîtân.*

In Gujrânwâlâ the *kanjî* or *rît* is very similar. It is observed in the eighth month, and is sometimes held in the house of the wife's parents.[3]

In Gurdâspur a wife, when pregnant for the first time, is sent to her parents' house in the seventh month, and presented with a *sêr* of jaggery, as an intimation to them of her condition. Her parents give her clothes for herself, her husband and his mother, and other presents, with which she returns to her husband's house. On the rising of the new moon in the seventh month, a Brahman is called in, and the husband and wife are seated side by side, with their near kinsmen. A jar (*kumbh*) is then filled with water, and a lamp filled with *ghî* put over it and lighted. The Brahman makes an idol of Ganêsh out of flour, and worships their ancestors. The garments of the pair are then tied together (a rite called *ganḍ chitrâwa*), and their pedigrees to the third degree recited, their ancestors' names being also written on a sheet of paper which is hung up on the wall. Rice is next distributed among the brotherhood. A small gold ornament, presented by her parents, is also hung round the wife's neck, and this is eventually given to the child when born.

In Siâlkoṭ the rite is not very dissimilar. The wife's parents send her presents, and on the appearance of the new moon, *i.e.,* on the second of the lunar month, she is bathed and dressed. Ancestors are worshipped. This rite called *rît* in Panjâbî, *bahore*[1] in Lahore, *bhora* in Montgomery and *sîmanat* in Sanskrit, is known as *sawánî* in Jammû, in which tract the Dôgras celebrate it by feasting kinsmen.

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[1] Apparently *kanjî* is a kind of sweetmeat: Hoshiârpur.

[2] Made of gram flour and curds fried in oil.

[3] But in Ramnâgar, a town in the Gûjrânwâla District, it is said that no rite is observed in the seventh or ninth month, only the *adh-gabh* being observed.

In Jhelum the rite is kept in the seventh or ninth month. The wife's parents send her sweets and fruits, and these are put in her lap. After this she must not leave her house. Both at the *kanjî* and *adh-gabh* in this District the wife bathes, and then receives a gift of clothes from her husband's younger brother, or other young kinsman, in whose face she gazes before she puts them on.

In Talagang the *kanjî* or *rît* is observed on an auspicious day in the seventh month at the house of the wife's parents, and all males are excluded from it, and not even informed of it, though boiled rice is distributed to the brotherhood on this occasion. In Hazro this *rît* is observed at 4 p.m. on the day of the new moon in the seventh month, and the priest's wife conducts it. Some jaggery is cut up with a knife and a portion given to her, while the rest is distributed among the near kin.

The Dewá-dhámî.

Another ceremony, with which the husband's parents are closely associated, is the *dewá-dhámî*.[2]

In Montgomery this rite is observed in the seventh or eighth month. The family priestess lights a lamp fed with *ghî* in a corner of the house, making a hearth and seven cakes of earth, and covering the latter with vermilion. Before these things the husband and wife prostrate themselves, and big loaves of flour fried in *ghî* are then distributed among the brotherhood. Until these articles have all been removed, the women of the family do not spin or do any other work. The things are then collected and given to the parents, who in return present the wife with a *trewar*,[3] a rupee and a half *ser* of jaggery. This rite is observed three days *before* the *kanjî* ceremony. But in Gûjrânwâlâ it is said to be held at the same time as the *rît*, and it must be held in the lower storey of the house, by night, the lamp being lighted in the southern corner.

In Hazro, the *dewá-dhámî* is also held on the same *rît*, by the kinswomen and the priest's wife—all males being excluded. The priestess begins by kindling a lamp and causing the wife to worship Ganesh. Sweetened rice or bread is then distributed. Next morning rice is boiled or *halwá* made; and the wife is bathed and dressed in the clothes sent by her parents. Another woman is then seated by her to represent her husband, and on her knees are put all the clothes received for him. Seven vessels and covers of cowdung are then made, and cardamums, rice, barley, *mung* (pulse), *pira* and two copper coins are placed in each. These vessels are then put between the two women, and the wife removes the covers, which the other woman replaces. This is done thrice. Then both dip their fingers in milk and water and each tries to seize the other's fingers thrice. Both then chew cardamums, which they spit over each other, and finally the rice or *halwâ* is given to the priestess, who also gets five annas or Rs. 1¼. Next day she is called in again and lights the lamp, which she extinguishes with milk and water. This ends the *rît.*

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[1] *Bhahore* in Panjabi Dictionary : s.v. *Kanjî*, p. 550.

[2] *Déwá* or *dîwá*, a lamp ; *dhâmî* is not given in the dictionaries, possibly to be derived from P. *dhâm*, s.f. a feast.

[3] *Trewar* = *tewar* ; see note [3] to p. 272 supra.

In Bahâwalpur, on the other hand, the *dewâ-dhâmî* is performed by the husband's father, who lights a lamp in a corner of the house, making an effigy of Ganesh and worshipping his ancestors, with his face turned to the north or towards the Ganges. While worshipping he must unloose the string of his *cholâ* or shirt, or the gods will not accept his devotions.

In Mandî the *rîts* of the fifth and seventh months are not observed at all, but in the beginning of the eighth month the *athwâhân*[1] is celebrated by putting an idol of Ganpatî on a red *chaukî*; and this the wife worships for a month, during which period she must not bathe, change her old clothes, or cross a river. In the beginning of the ninth month follows the *barânwîn*, at which the wife's kinswomen assemble to bathe her, make her put on new clothes and look at a handsome boy to ensure her own child being a son. This boy is dismissed with a present of money. Then the wife is made to stand up, and a kerchief is tied round her waist, cakes, money, gold and silver, flowers, a cocoanut, a pomegranate, and a mixture of rice, sesame and sugar sent by her parents, are put in her lap. Of the money, part goes to the priest, and the rest to the midwife. On this occasion her nearest relative also gives the wife money and ornaments for her own use. Then the wife reveres Ganpatî, and a vessel (*kalas*) of earth, brass or copper is put in an octagonal *jantar* (diagram), and in it is placed a cocoanut, with an image of Vishnu. The wife is then directed to worship the *kalas*, and after that a *hawan* is performed, a he-goat[2] being sacrificed to appease the fire deity. Brahmans and near relatives are then fed, and the (kins)women sing songs and make merry all night. This rite is observed in every pregnancy.

The Eighth and Ninth Months.

If we exclude such of the foregoing observances as are postponed till the eighth or ninth month, there are few which are necessarily held in either of these two months. In Hissâr the *kanjî* is observed in the seventh or ninth month,[3] and in some places the *adh-garbh*[4] is actually said to be deferred till the ninth month. In parts of Hoshiârpur there is, however, a distinct rite in the ninth month, on the second day, thus corresponding to the rite in the seventh. A corner of the house is plastered, and the wife is seated there, with her face to the east, and made to worship Ganesh. A cocoanut and a rupee are also put in her lap by way of *shagûn* or good augury, and boiled rice is set before. Sweets, etc., sent by her parents, are distributed among the brotherhood.[1] In the northern part of the same District it is said that the *rît* is held in the ninth month, and consists simply in the distribution of *kaṛî* (gram flour cooked in whey) to the brotherhood in order to proclaim the pregnancy.[2]

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[1] The Sanskr. *pun san.* In the parent State of Suket the *athwan* is observed in the eighth or ninth month. The woman's parents send her clothes for herself and the child. The clothes are perfumed. A rupee is also sent. They also send one or two garments for the husband's mother.

[2] Or vicariously a cocoanut, which is split into two pieces.

[3] In Fâzilkâ the *kanjî* is said to be held only in the ninth. In Gûjrânwâlâ it is observed in the seventh or eighth month.

[4] *Adh-garbh* = *adh-gabh.*

Athwânsâ.

At the commencement of the eighth month the Shaikhâwat Râjputs observe a rite called the *athwânsâ.* The wife's parents send her clothes, ornaments, fruit, money, and on their receipt all her kinswomen assemble. Brahmans then worship the gods and the wife bathes, after which she puts on the new clothes. With this the following custom among the same people appears to be connected.

After birth a child of either sex is bathed in the blood of a he-goat and a necklet of its flesh is put round the child's neck. Then it is dressed in a blue *kurtâ* and cap, with a belt of blue silk round its waist. These clothes are worn for six or seven months, but the necklet is retained for two years and the belt worn till it reaches the age of five.

Mâwalî.

All Hindus who believe in the god Mâwalî perform the following rite in the seventh month: a mixture of rice, *mûng* and barley is made, and an earthen vessel sent for from the potter's house. This is marked seven times with three things, henna, black and red colouring. Then boiled rice and the dish described above are placed in her lap seven times, some cooked *mûng* being also put in the middle of the vessel. Lastly, a red thread is put in it and taken out by the midwife, who deposits it under a *ber* tree. All the members of the family then eat the food.

Eclipses in Pregnancy.

During pregnancy the parents are both peculiarly susceptible to the effects of an eclipse, and it is safest for the wife to keep her bed and not even see the eclipse, in Ambâla, but the father is not under any such necessity. In Dera Ghâzî Khân, however, either parent must avoid applying antimony to the eyelids, or a *tilak* to the forehead, during an eclipse, lest the child be so marked. Both should also avoid locking or unlocking a lock, lest its fingers be bent and powerless. If they cut wood with an axe, the child will have a hare-lip; or if they break anything, such as a piece of wood, its fingers will be marked. In short, anything such as stamping or printing done during an eclipse is liable to leave its impress on the child's body.

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[1] The Bâsdeo Brahmans observe this rite in the eighth month, and feast the whole brotherhood, males and females, on this occasion, great quantities of curd and sugar being given them.

[2] It is also said that the *rît* in this part varies in different castes, and that it is repeated "several times." It is specifically described as being observed thrice, in the fifth month (when *kanjî* and *pakauras* are distributed); in the seventh (when boiled rice and pulse are sent round), and in the ninth (when moist gram and jaggery are distributed among the brotherhood). It is not stated that all three rites are observed by the same caste.

Abortion.

If abortion has ever occurred, or is feared for the woman, *syânas* or wizards prevent it by giving her (i) a piece of wood from a scaffold on which a man has been hanged, or (ii) pice which have been thrown over the *biwân* or hearse of an old person, or (iii) a tiger's flesh or claw. The idea in each of these charms is to increase the vitality or prolong the life of the child.

MUHAMMADAN PREGNANCY OBSERVANCES IN THE PUNJAB.

By H. A. Rose.

Charms against miscarriage.

Among some tribes a woman who has previously miscarried wears a charm, such as a thread or amulet, on her navel; others wear a cowry on that part to avert the child's being born dead. The charms are blown upon before being put on, the fee paid depending on one's means.

Satwahin.

In Ambâla the observance in the seventh month, or *satwahin*, is said to be confined to the towns. It simply consists in the parents sending sugar, rice, etc., to their daughter on her first pregnancy, a woman related to the family also drops fruit into her lap.

In Sirmûr the woman's parents try to arrange for her to be sent to their house, but if this cannot be done they send her presents of rice, sweets, fruit, etc., with clothes for herself and the child. This is called *kîokâ*.[1]

In Kângṛa on the commencement of the seventh month the woman's parents bring her presents consisting of red clothes, dry fruit, henna, scented oil, and *missî*, with other perfumes and an ornament, preferably one for the arm. These gifts are brought in procession, musicians and singers accompanying it. On arriving at the husband's house, they make their daughter sit on a stool, while the *nain* dresses her in the red suit and dyes her hands with the henna. She is also garlanded with flowers, and her lap filled with dry fruits, such as cocoanut or dates. These are all eaten, apparently by her husbands' parents, she herself not being permitted to partake of them. Then the husbands' parents make *karâhi* (of flour, *guṛ* and *ghî*), and this is eaten by people of the *gôtar*, but by no others. Persons not belonging to the *gôtar* are feasted separately. Prior to this observance a pregnant wife may not wear new clothes or ornaments. After it she must not go to her father's house until forty days have elapsed from her confinement.

In Kapûrthala the parents first send their daughter clothes, etc., in the sixth or seventh month, and then she is taken to their house, the sweets sent by them being divided among her husband's kin. Similarly in Ludhiâna it is thought that the first confinement ought to take place in the woman's own house. In Mâler Kotla the Muhammadans, especially the dominant Paṭhân families, observe two distinct customs, on a first pregnancy. As a rule the first, the *satwahan*, takes place at the husband's house. The woman's mother is formally notified of the fact that her daughter is in the seventh month of her pregnancy, and she comes to the house, bringing a suit of clothes, sweets and dried fruit. Towards the end of the seventh month the woman bathes and puts on new clothes brought by her mother, perfuming herself with scents. Fruit is then put in her lap, and she then sits on a floor which has been plastered, while a *mirâsan* sings the appointed eulogies, called *sohla,* of Shaikh Sadr Jahân, to a drum accompaniment. Throughout this performance the woman sits with her head bent down, and her hair unloosed, but combed and oiled. Occasionally she falls into an ecstasy under the influence of the Shaikh, who often makes her his mouth-piece. Sweets are then sent round to relations and neighbours, and the *mirâsan* dismissed with her fee. In the evening the *darweshes* are fed at the mother's expense, and next day she takes her daughter home, if the husband's parents agree to this.

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[1] *Kîokâ*, not traceable in the dictionaries.

In Lahore the *rît* is observed in the beginning of the seventh month, as follows:—The kinswomen assemble and eat out of one tray, the matrons of the family giving the woman fresh fruits as an auspicious omen. The mothers of the couple are also congratulated. Then the kinswomen are feasted, and a Ḍûmnî sings songs. After this the woman is dressed in coloured garments, and puts on ornaments of flowers. At night her hands are stained with henna and the girls of the family sing. This observance is only held by the lower classes of Muhammadans, such as the Kakezais (distillers), Qasâbs (butchers) Arains (market gardeners), Dhobis (washermen) and *mâshkis* or watermen. Among all classes the woman's mother brings her to her own house at the commencement of the ninth month, and on the day of her arrival sends for the almonds, dates, saffron, etc., required on or after her delivery. *Tupâshâs* are distributed among the family, and also among the women of the quarter, a rite called *sauda* by the women.

It is a very general rule among all Muhammadan castes in the north of the Punjab that the woman should avoid eating fruit, wearing fine clothes, or any kind of adornment until the *rît* is performed on the commencement of the seventh month. This *rît* consists merely in feasting the brotherhood, but it is also not uncommon for the woman's parents to send her a present of a *trewar,* and to boil rice which is eaten at a feast in the name of their ancestors. The *trewar* is then given to the husband's sister, or the daughter of his nearest kinsman. After the *rît* the woman may use scent. Wheat, too, is parched, mixed with jaggery, and made into balls, which are distributed among the brotherhood.

In Râwalpindî a pregnant woman avoids the use of antimony, or *dandâsa.*[1] She also avoids the shade of the *dharek*[2] and the shadow of a woman suffering from *athrâ,*[3] i.e., one whose children die in infancy.

In Fateh Jang *rît* is observed in the seventh month, *halwâ* being distributed among the brotherhood. This is done either in her parents' house, or in her husband's, but in the former case the consent of the husband's parents is necessary.

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[1] *Dandâsa* or walnut bark is used as a tooth-stick (the literal meaning of the word), or for chewing, in order to redden the lips.

[2] *Dharek*, the Melia Azedarach.

[3] *Athrâ* (? lit. a bead—the word does not appear in the Panjabi Dictionary). An *athrâ-wâlî* is a woman whose children are born prematurely and generally die. A bead, which changes

The Satwânsâ.

Muhammadans in Hânsî observe the *satwânsâ* in the seventh month of pregnancy. Seven or nine jars of water are brought from as many different wells, and the woman bathes in the water thus brought. Some Muhammadans take the woman to the nearest mosque with the jars on her head, and make her draw water from the well attached to the mosque. Her nearest kinswomen accompany her, and the observance is often held at night. Others simply give the woman a hot bath.[1] Friday, at the time of the Asar prayers, is an auspicious day for this ceremony, in connection with which alms are given in the names of ancestors and the Prophet.

Some castes send the women a suit of green clothes, red bangles, a *naherná*, some *mehndî*, and a silver vessel. The clothes and bangles are worn by the woman, but the henna is used not only by her, but by her friends as well, if they are desirous of offspring, while the *naherná* and silver vessel are kept for the *chhattî*. After this one and a quarter *pâos* of sugar are sent to each relative and friend Some families boil rice with sugar, and with it feast the woman and seven others, who are also married, some being also given to *faqîrs*. After this the woman is given vegetables and sweets.

In Sirsa the rite is called *satwânsî* and simply consists in the parents sending their daughter a gift of clothes, henna and dried fruit in the seventh month of her pregnancy. In Rohtak the *satwânsî* is held at the beginning of the seventh month. The woman is dressed in red, and sugar also put in her lap. The Ḍûm women, who sing sings on the occasion, get a rupee or two.

In Rohtak, among the more orthodox Muhammadans, there are no regular rites during pregnancy, but the barber is sent to announce to the mother's parents, and he takes them a rupee as *til châwalî*.[2] In the seventh month one or two men, and several of the women, bring parched unhusked rice, *tapâshâs* and fruit, with some red cloth, to the woman, with cloth for her husband's parents and near kinsmen. The woman puts on the red cloth, and the rice, etc., is thrown into her lap. The menials also get certain dues. This ceremony, however, is not universal.

Determination of sex.

If the milk in the woman's breasts before birth be thin the birth of a boy is anticipated, otherwise a girl is expected. Or sometimes some of the milk is

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its colour, is believed to counteract the effects of *athrâ*. This bead is rare and is sold by gipsies at fancy prices. It is also tied to the leg of a new-born child as a talisman against *athrâ* : and *athrâ kâ mankâ* means one of a changeable, volatile disposition (*mankâ* = bead in Panjâbî).

[1] The Hammâls of Hânsî have a curious custom, which looks like a relic of the *couvade*. The woman's parents send her a present of Rs. 5, a suit of clothes, some scent and a comb. After bathing she puts on her husband's trousers, and a chaplet of flowers. Ḍûm women also sing songs on this occasion. Boiled rice is distributed among the brotherhood.

[2] *Til châwalî* is simply rice and *til* mixed : it is used as a food.

put in a shell, and fire applied to it; if it dries up completely, a girl is expected, otherwise a boy.

In the city of Delhi, where Muhammadans of good birth are numerous, many elaborate customs connected with pregnancy survive. The craving for tart, savoury food has given rise to the polite phrase: *In kâ khaṭṭe-mîṭhe ko jî châhtâ hai,* lit. "her heart yearns for bitter-sweet things," *i.e.*, "she is pregnant." Other phrases are *pâon bhârî honâ* (to be heavy-footed), *do-jîyâ honâ* (to have a second life), *din chaṛhnâ* (to dawn), *umed honâ* (to have hopes) etc.: and women friends say *mubârak, salâmat! i.e.*, "may you be blessed and the child be safe!" to the expectant mother.

The Satwânsâ: in Delhi.

When the seventh month begins the woman's parents bring her *sadhaur*,[1] a Hindu custom. This *sadhaur* consists of seven kinds of vegetables, dried fruits, cakes, etc., and at 4 p.m. the woman's lap is filled with these things; then she bathes and is dressed in coloured garments, with a red sheet over her head, and flower ornaments are put on her—to make her, as it were, *again a bride.* Her husband's sisters then fill her lap with the seven kinds of fruit, etc., and receive presents of money in return. They get the vegetables, dried fruit, the head-sheet, and the rupees of the *neg*,[2] all the rest being divided amongst the other members of the family. A cocoanut is then broken in half; and if the kernel be white the woman will have *ujlâ phûl* or white fruit, *i.e.*, a boy. This cocoanut is called *jhanḍûla*, or "hairy," just as a new-born child is so called.[3]

The Naumâsâ: in Delhi.

At the beginning of the ninth month, the woman's parents send her various presents, including a red veil, seven kinds of fruit, *neg* for the husband's sisters, and rupees to buy the *panjîrî*,[4] which must be made at the woman's house. Her lap is filled, as in the *satwânsâ*, by the husband's near kinswomen. The midwife at this stage rubs the woman with oil, and receives a fee, to which all the women contribute. The fruit is the perquisite of the husband's sisters, together with the *neg* and the red veil, as before. The midwife gets the nail-parer, one of the presents given by the woman's parents, and the silver oil cup used for the oil. The woman now goes to her parents' house—an observance called *pâon phernâ*, or turning the feet, with some *panjîrî*, and returns some six or seven days later, bringing with her fresh fruit and sweets. After the *naumâsâ* is finished, the midwife goes to buy the *kîokâ*[5] or various drugs required for the confinement.

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[1] *Sadhaur* is said to mean seven things in Hindî. In some families it is brought in the fifth month.

[2] *Neg* is any customary present at weddings, etc., made to relatives or to servants, *c.* Shakespear's Hindustani Dictionary, s.v.

[3] In songs a new-born child is often so termed: *cf. ḥolaṛ.*

[4] *Panjîrî* consists of five (whence the term) ingredients, viz., dry dates, gum, water-lily seed, cocoanut and ginger—all mixed with *sûjî* or meal and fried in *ghî.*

[5] Cf. supra, p. 279: the word seems to have a different meaning in Sirmûr.

TATU IN THE SOCIETY ISLANDS.

By H. Ling Roth.

[With Plates, XXIII-XXV.]

General Description.

In a previous paper, *Maori Tatu and Moko,*[1] I gave the origin of the word tatu, or, as it is more commonly spelled, tattoo; and in connection with the use of this word, it is a curious fact that, although the art of ornamental puncturing of the skin was known to European travellers from other parts of the world, until Cook's return from his first visit to Tahiti there was no common word in use to denote the art. Bougainville, the discoverer of the Society Islands, noticed the art there, and thus refers to it: The women of "Taiti dye their loins and buttocks of a deep blue. This is an ornament, and at the same time a mark of distinction. The men are subject to the same fashion. I cannot say how they do to impress these indelible marks, unless it is by puncturing the skin and pouring the juice of certain herbs upon it, as I have seen it practised by the natives of Canada."[2] But he gives no clue that he knew what the art was called by the natives, so that the world is indebted to Cook and Banks for the word tatu. According to the accounts of Banks and Cook, which were the next given to the civilised world of the day, every Tahitian was marked in different parts of his body. From Banks we learn, "Some have ill-designed figures of men, birds or dogs; but they more generally have a Z, either plain—as is generally the case with the women on every joint of their fingers and toes, and often round the outside of their feet—or in different figures such as squares, circles, crescents, etc., which both sexes have on their arms and legs; in short, they have an infinite diversity of figure in which they place this mark. Although they vary so much in the application of the figures, yet all the islanders I have seen (except those of Oheteroa) agree in having their buttocks covered with a deep black. Over this most have arches, which are often a quarter of an inch broad, drawn one above the other as high as their short ribs, and neatly worked on their edges with indentations, etc. These arches are their great pride." The natives of Heteroa "were not tattowed like them [the Tahitians], but had instead black marks about as broad as my hand under their arm-pits, the sides of which marks were deeply indented. They had also smaller circles round their arms and legs."[3] Some old men, from a low island called Noonoora, seen by Banks, "had the greater part of their bodies covered with large patches of black, which ended in deep indentations like coarse imitations of flame."[4]

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[1] *Journ. Anth. Inst.*, xxxi, 1901, p. 29.

[2] Bougainville's *Voy.*, Forster's transl., London, 1772, p. 251.

[3] Banks, p. 124.

[4] *Id.*, p. 128.

Geo. Forster tells us that those singular black stains, which are mentioned by former voyagers, "were particularly visible on the loins of the common men, who went about almost naked."[1] Later on at Matavai Bay (Tahiti) he speaks of an important chief and large man accompanying the king who "was punctured in a surprising manner which we had never seen before, large black blotches of various shapes almost covering his arms, legs and sides."[2] On a very athletic chief from Bora Bora he says, "the punctuation, which the natives call tattow, consisted of the most singular square blotches on his arms and of large black stripes across the breast, belly and back. His loins and thighs were uniformly black,"[3] and on the next page he refers to another chief from the same island who was similarly marked. J. R. Forster records that "both sexes have many marks on their skin sometimes which are indelible for life. The men have sometimes not only a black part on their buttocks, but sometimes on the arms, and even their sides and various other parts of the body marked in this manner. . . . The arches which they design on their buttocks obtain the name of *avaree*; the parts which are one mass of black on the buttocks are named *toumarro,* and the arches which are thus designed on the buttocks of their females, and are honourable marks of their puberty, are called *toto-hoowa.*"[4]

Neither of the Forsters appear to have met with any of the more artistic tatu as is recorded by Ellis some forty years later. This may perhaps be due to change of fashion. Darwin mentions, for instance, that at Tahiti when he was there the sock design for tatu was partly gone by.[5] Speaking of the New Zealand Moko and Marquesas tatu, Ellis says: "The Tahitian tatauing is more simple and displays greater taste and elegance than either of the others. Though some of the figures are arbitrary such as stars, circles, lozenges, etc., the patterns are usually taken from nature, and are often some of the most graceful. A cocoa-nut tree is a favourite object; and I have often admired the taste displayed in the marking of a chief's leg, when I have seen a cocoa-nut tree correctly and distinctly drawn, its root spreading at the heel, its elastic stalk pencilled as it were along the tendon, and its waving plume gracefully spread out on the broad part of the calf. Sometimes a couple of stems would be twined up from the heel and divided on the calf, each bearing a plume of leaves. The ornaments round the ankle and upon the instep make them often appear as if they wore the elegant Eastern sandal. The sides of the legs are sometimes tataued from the ankle upward, which gives the appearance of wearing pantaloons with ornamented seams. From the lower part of the back a number of straight, waved, or zigzag lines rise in the direction of the spine and branch off regularly towards the shoulders. But of the upper part of the body the chest is the most tataued. Every variety of figure is to be seen here. Cocoa-nut and bread-fruit trees, with convolvulus wreaths hanging round them, boys gathering the fruit, men engaged in battle, in the manual exercise, triumphing over a fallen foe; or, as I have frequently seen it, they are represented as carrying a human sacrifice to the temple. Every kind of animal—goats, dogs, fowls and fish—may at times be seen on this part of the body; muskets, swords, pistols, clubs, spears, and other weapons of war are also stamped upon their arms or chest.

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[1] *Voy.*, Lond., 1777, 4to, i, 256.

[2] *Id.*, p. 305.

[3] *Id.*, p. 390.

[4] *Observations*, London, 1778, p. 557.

[5] *Journ. Research*, Lond., 1839, p. 481.

"They are not all crowded upon the same person, but each one makes a selection according to his fancy; and I have frequently thought the tatauing on a man's person might serve as an index to his disposition and his character. The neck and throat were sometimes singularly marked. The head and ears were also tataued, though among the Tahitians this ornament was seldom applied to the face.

"The females used the tatau more sparingly than the men, and with greater taste. It was always the custom of the natives to go barefooted; and the feet, to an inch above the ankles, of the chief women were often neatly tataued, appearing as if they wore a loose kind of sandal, or elegant open-worked boot. The arms were frequently marked with circles, their fingers with rings, and their wrists with bracelets. The thin transparent skin over the black dye often gave to the tatau a tinge of blue." Darwin appears, like Ellis, to have been impressed with some of the elegance of the designs. He says: "Most of the men are tattooed; and the ornaments follow the curvature of the body so gracefully, that they have a very pleasing and elegant effect. One common figure, varying only in its detail, branches somewhat like a tuft of palm-leaves[1] from the line of the backbone, and curls round each side. The simile may be a fanciful one, but I thought the body of a man thus ornamented was like the trunk of a noble tree embraced by a delicate creeper."[2]

Kotzbue, who visited Tahiti not many years after Ellis, writes: "The first voyagers who visited this island describe the tattooing as representing half-moons, birds and irregular or zigzag lines; but on a better acquaintance with Europeans the fashion changed, and drawings of our tools, animals, and even compasses and mathematical instruments, were executed with the greatest exactness on their bodies. Pantaloons being articles in particular request among them, he who could not obtain a pair, comforted himself by having the representation of them etched on his legs. Many of these are still to be seen."[3] Of a court functionary he tells us: "His legs were adorned by a tattooed representation of pantaloons; and when he turned his back and stooped very little, he showed also a drawing of a large compass, with all the thirty-two points executed with striking exactness."[4] This copying of something new had, however, commenced long previously, for Bligh when at Huaheine in April, 1789, saw many islanders "who had the representation of a man on horseback tattowed on their legs."[5] Ellis, as we have seen above, mentions the tatuing of muskets, pistols, etc., on men's chests. Beechey saw a Tahiti man who "had a hog and a cock tattooed upon his breast," and reports of the Tahiti women that "neatly-executed blue lines formed an indelible net-work" over their feet.[1] Moerenhout, like Ellis, considered the designs to be "less profuse, but arranged with more taste than at the Marquesas. Natural objects, such as animals, fishes, and even men, were frequently copied." Like Kotzbue and Bligh, he noticed the introduction of foreign designs, if such they can be called: "A native of Tahiti once saw a *fleur de lys* on the compass of the French vessel *Adhemar.* Having examined it carefully he went away and returned shortly afterwards with another native who had this design perfectly copied on to his arm. Neither here nor in the neighbouring islands was there any trace of tatuing on the face."[2]

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[1] The similarity is not closer than between the capital of a Corinthian column and a tuft of acanthus.

[2] *Journ.*, Lond., 1839, p. 481.

[3] I, pp. 174-5.

[4] I, p. 179.

[5] *Voy. of the Bounty*, Lond., 1792, p. 144.

During Cook's first visit, Banks noticed that "Their faces are generally left without any marks; I did not see more than one instance to the contrary," and Bennett mentions that "the face is either untouched, or marked with only a few punctures." Lieut. Wild, U.S. Navy, also says there was "never a mark on the face."[3] Ellis remarks that "the females seldom, if ever, marked their faces," and Moerenhout practically tells us the same of the women. Darwin, although he came late on the scene, remarks that the fashion in tatu was far from immutable, and this appears to have been the case, for Ellis says of the women, "the figures on their feet and hands were all the ornaments they exhibited." But Bennett found "the older natives of both sexes handsomely and profusely tatooed from the waist to the toes" and the back of the hand and fingers "similarly adorned." His record is some twelve years later than Ellis'. Darwin, still later, found the women "tattooed in the same manner as the men, and very commonly on their fingers." He found "many of the older people had their feet covered with small figures, placed in order so as to resemble a sock," a fashion then changing. Lieut. Wild refers to this fashion on the person of a Miss Toanni, "open-worked indigo stockings that would bear washing, while her fingers were covered with indelible blue rings of the same material as the hose."[4] According to Eug. Delessert, who wrote about the same time, the women "take great care of their hands, which are generally lightly covered with tatu marks in the design of bracelets; the same of their legs."[5] Moerenhout found "the women were always tatued on the hands, shins, feet, thighs and hips, but never on any other portions of their body."

THE INSTRUMENTS USED. (Plate XXV.)

The instruments used consisted of a miniature hoe or adze-shaped tool with sharp teeth in the place of the usual sharp cutting edge, and a spatula for striking the first-named and driving it into the skin. Neither instrument is clearly described by Cook and Banks. They say the pricker is "made of flat bone or shell, the lower part of which is cut into sharp teeth, numbering from three to twenty, according to the purposes it is to be used for; the upper end is fastened to a handle." Parkinson in describing his plates gives a better description, saying these "are their tataowing instruments, the handles of which are wood, towards the end of which is a hollow made to lay the fore-finger of the hand in which holds it; the head is made of one or two flat pieces of bone, of various breadths, tapering to a point towards the handle, to which it is fastened very tight with fibres of the bark of a tree; the broad part, or bottom, is cut into many small sharp teeth. . . . These instruments are about five inches in length." From neither of these descriptions, without illustrations before us, are we able to form a satisfactory conception of what the actual tatu instrument is like. J. R. Forster merely speaks of a "toothed instrument of bone which is called Eoōwee-tatattaōu."[1] Ellis says, "The instruments were rude, though ingenious, and consisted of the bones of birds or fishes, fastened with fine thread to a small stick." Moerenhout, by likening the instrument to an adze, gives us the first approach to an idea as to its form. "The instrument with which these tatu marks were made was extremely simple, consisting only of a very small piece of bone, rarely longer than half-an-inch, shaped like an adze with a proportionate handle. At the cutting edge this instrument was furnished with fine points or teeth with which the pricks were made in the skin." According to Bennett, the instrument consisted of a thin plate of boar's tusk, about half-an-inch in breadth, sharply toothed at its margin, and fixed at an angle, to the extremity of a slender handle." Walpole, who visited the islands ten years later, likens the instruments to "miniature hoes with sharp points at the edge."

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[1] *Narr.*, Lond., 1831, pp. 162 and 202.

[2] pp. 122, 124.

[3] *Los Gringos*, Lond., 1849, p. 373.

[4] p. 372.

[5] *Voyages dans les Deux Oceans*, Paris, 1848, p. 291.

The above-described instrument, which was the actual pricker of the skin, was driven in by being "struck upon the handle with a stick used for that purpose (Banks)." Parkinson calls this special stick a "paddle, made of wood neatly shaped and worked very smooth," and depicts it accordingly. Ellis and Moerenhout mention this stick; Bennett speaks of it as a "second and heavier piece of wood, of conical form," and Walpole calls it a "small hammer." J. R. Forster calls this second instrument "a spatula of wood" on one end of which they have contrived a kind of small club of the thickness of a finger . . . . This spatula is called a *Tatāë*.

THE PIGMENT USED.

With one exception, all who have written on the subject are agreed as to the pigment used. Banks and Cook tell us "The colour they use is lamp black, prepared from the smoke of a kind of oily nut, used by them instead of candles. This is kept in cocoanut shells, and occasionally mixed with water for use." J. R. Forster likewise calls the pigment lamp black and water, and says it was called *arahoàtattàou*. Ellis is a little more explicit: "The colouring matter was the kernel of the candle-nut, *aleurites triloba*, called by the natives *tiairi*. This was first baked, and then reduced to charcoal, and afterwards pulverized and mixed with oil." Bennett, who underwent the operation especially in order to see how it was performed, speaks of the pigment as "a black fluid composed of the lamp black of burned candle-nuts diluted to the consistence of printers' ink." According to Walpole it was "a mixture of charred candle-nut, doodoe nut and water," but he does not explain what the doodoe nut is. The one exception is Parkinson, who talks of a "black liquid, or juice, expressed from some plant." Mr. Joyce has kindly called my attention to the fact that in the British Museum there is a phial labelled as follows: "Black colouring substance used by the natives of Otaheite for tatowing the skin." It was most probably part of the Belcher Collection. Prof. Church has examined this powder, and remarks: "It is vegetable charcoal, somewhat impure through the presence of an earthy matter in which there is a little oxide of iron and some silicious sand: but this earthy matter is probably adventitious, and is small in amount."

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[1] p. 557.

THE AGE AT WHICH THE OPERATION IS PERFORMED.

The age at which the operation was first commenced is given variously by the different travellers. Banks says, "it is performed between the ages of fourteen and eighteen." Ellis tells us, "They usually began to impress these unfading marks upon their persons at an early age, frequently before they had reached the seventh or eighth year." Moerenhout gives the age as eight or ten when these painful operations began, and considered this to be an earlier age than was usual on the other islands: "The operation began on the thighs, and the young girls only began to wear clothes when they had received the first tatu marks."

THE METHOD OF TATU.

Judging by the meagre accounts of Banks and Parkinson, and R. J. Forster, one would think that the pattern was pricked in without any preliminary design, for Banks says the teeth of the instrument "are dipped into the black liquor, and then driven by quick sharp blows, struck upon the handle with a stick used for that purpose, into the skin, so deeply that every stroke is followed by a small quantity of blood, or serum at least, and the part so marked remains sore for many days before it heals"; and Parkinson says: "When they mark any person, they dip the instrument, a small one or large one, according to the figure intended, into a black liquid or juice, expressed from some plant, and, placing it on the part intended to be marked, give it a small blow with the paddle, which causes a great deal of pain." According to R. J. Forster, the marks were "made by puncturing the part with the instrument dipped into lamp black and water," and "with the small club they give repeated gentle strokes on the toothed instrument, in order to make it pierce the skin." On the other hand, Ellis[1] and Moerenhout tells us there was a preparatory design. Thus, Ellis: "The figure or pattern to be tataued was portrayed upon the skin with a piece of charcoal, though at times the operation was guided only by the eye"; and Moerenhout: "The *tahoua* dipped these teeth in the blue liquid, and placed them on the design which he had already drawn with charcoal or something else; then he struck it lightly with another little stick. The teeth penetrated the skin and the liquid flowed into the pricks made, which however light they appeared to be, remained nevertheless indelible." Walpole's description is quite different from any others. He tells us: "The artist rubbed the arm or part with a mixture of charred candle-nut, doodoe nut, and water; then the instrument was laid on and tapped till, after no end of taps, blood and pain, and fresh stuff put on, he wiped all off, and there was the design neatly done in clear blue." From this it would appear that the artist used no design, but worked his way through the pigment, which was driven in just as if the instrument had been dipped into the pigment first. But a better knowledge as to how the operation was performed is to be obtained from Bennett, who was operated upon specially, in order that he might learn how it was done by actual personal experience. Although the operation took place at Raiatea, it was carried out by a Tahitian. "From the numerous patterns displayed on his person, we selected a circular figure named *pote;* the spot I preferred devoting to the impression was the upper arm. The operation commenced by bending the elastic rib of a cocoanut leaf into a circular form, and smearing its edge with a black fluid. . . . This placed on the skin, marked the outer circle, to execute which by the eye alone would have proved a difficult task; the remainder of the design, however, was completed without any similar guide. The tattooing instrument was then imbued with the black fluid, and made to penetrate the skin by striking short and quick strokes on its handle with a second and heavier piece of wood, of conical form; the artist desisting after every few taps to wipe away the ink and oozing blood, that he might observe better the effect produced, and the line to follow. In less than an hour the design was completed. The pain produced by the operation was rather annoying than severe. It was only felt during the application of the toothed instrument, when the sensation was of a dull pricking nature, hard to endure when long protracted and felt much more sensitively in some parts of the skin than in others. The bleeding from the punctures was trifling at first; but as the work proceeded, and the stimulus determined the blood more freely to the surface, each application of the instrument was attended with a greater flow. The arm continued inflamed, and a red serum oozed from the punctures for several hours; but on the following day the part was merely tender, and the redness of the skin had given place to a bruised appearance (from extravasated blood) extending to the elbow (an effect, of course, not perceptible in the dark skin of the native); while the effused serum gave the tatooed figure a varnished appearance. In four days the arm was perfectly well, and the scarf skin peeling off, left the tatooed marks beneath of a bright blue colour, slightly elevated. The operation of tatooing is not always followed by these mild results; in some robust Europeans, whose curiosity has induced them to submit to the process, I have witnessed very severe effects ensue, the enflamed skin passing into a state of suppuration; though it is curious to notice how far the latter effect, and even ulceration, will extend, without the integrity of the tatooed figure being materially impaired (pp. 119–120)."[1] But Europeans are not the only ones who are badly affected. Ellis says of the Tahitians: "Many suffered much from the pain occasioned by the operation, and from the swelling and inflammation that followed, which often continued for a long time, and ultimately proved fatal. This, however, seldom deterred others from attempting to secure this badge of distinction or embellishment of person." "I saw," says Banks, "this operation performed, on the 5th of July, on the buttocks of a girl about fourteen years of age; for some time she bore it with great resolution, but afterwards began to complain, and in a little time grew so outrageous that all the threats and force her friends could use could hardly oblige her to endure it. I had occasion to remain in an adjoining house an hour at least after this operation began, and yet went away before it was finished, in which time only one side was blacked, the other having been done some weeks before." This is a very different version from that given by Wilson: "The man who does the tattooing, to young or old, is called at the pleasure of the parties, and no constraint is ever used. The young persons will not suffer him to leave off while they can endure the stroke of the instrument, though they make cries and lamentations as if he was killing them. The girls are always attended by some female relations, who hold them while struggling under the pain of the operation, encouraging them to cry out, which they think helps to alleviate the anguish. When the pain becomes excessive, and they say they can endure no more, they use no compulsion. No person ever lifts his hand, even to strike a child: on the contrary, the young girls under the operation will often strike those who compassionate them, and wish them to suspend the operation, as they are never esteemed women till the whole is finished: this sometimes lasts for a year, or more, by intervals, from the commencement of the tattooing.[2] Ellis tells us[3] that, "so long as the person could endure the pain, the operator continued his work, but it was seldom that a whole figure was completed at once. Hence it proved a tedious process, especially with those who had a variety of patterns, or stained the greater part of their bodies." Moerenhout also testifies to the pain caused by the operations: "they were the cause of such severe sufferings that sometimes the girl died under them, although the *séances* were of short duration, in order not to exhaust the poor patient. During the operation, the girls were surrounded by mothers and other women who upheld them, encouraged them, and even beat them to make them docile and quiet while the *tahoua* fixed on their persons his fantastic but always graceful designs."[4] In R. J. Forster's time,[5] "the priests are the only persons entitled to perform these operations, and are paid for their trouble in cloth, fowls, fish, and after the natives had obtained European commodities, in nails and beads." More than half a century later, Bennett informs us,[1] "But few of the natives excel in the art of tatooing. Those who are deformed with hump backs, bear the greatest share of reputation amongst their countrymen; probably from the circumstance of their devoting themselves more exclusively to this less laborious employment."

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[1] *Polyn. Research*, II.

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[1] In Borneo the experience appears to be different, for there it has been recorded that when ulceration has occurred the design becomes blurred or lost.

[2] *Miss. Voy.*, London, 1799, p. 339.

[3] *Polyn. Res.*, II, p. 464.

[4] II, p. 122.

[5] p. 557.

THE ORIGIN OF THE CUSTOM.

To be tatued was so essential, says Banks, "that I have never seen one single person of years of maturity without it. What can be a sufficient inducement to suffer so much pain is difficult to say; not one Indian (though I have asked hundreds) would ever give me the least reason for it. Possibly superstition may have something to do with it, nothing else in my opinion could be a sufficient cause for so apparently absurd a custom. As for the smaller marks upon the fingers, arms, etc., they may be intended only for beauty." But they were not all equally tatued nor on the same parts of the body, and Banks ascribed this to the humour or to the different circumstances of the person tatued. He found that both men and women showed the tatu marks with great pleasure, "whether as a mark of beauty, or a proof of their perseverance and resolution in bearing pain I cannot tell. The pain in doing this is almost intolerable, especially the arches upon the loins, which are so much more susceptible to pain than the fleshy buttocks." G. Forster[2] speaks of the men and women of Tahiti wondering that he and his companions had no punctures on their hands. Ellis remarks: "The fondness of the Tahitians for these ornaments, as they considered the marks thus impressed, is truly remarkable," and concludes with the belief that in modern times it was "adopted by the greater number merely as a personal ornament." In later times no doubt the tatu became to be looked upon as an adornment, and Moerenhout was not far wrong in saying, in 1837, that the natives performed the operation, "not because rites obliged them to, but merely to increase their beauty, for in those islands there was no beauty without these decorations." But as Banks was correctly informed, "Some of them, we were told, had significations; but these we never learnt to our satisfaction." At Raietea, G. Forster[3] saw some Arreoys who were punctured in large broad blotches, and was assured that "these were the most eminent members of the society, and that the more they were covered with punctures, the higher was their rank. They professed to be warriors." Something similar is recorded by Ellis,[4] who mentions that the Arreoys "are distinguished by being tatued in a peculiar manner, particularly those who are natives of Bora Bora." In his researches he acknowledges that "although practised by all classes I have not been able to trace its origin. It is by some adopted as a badge of mourning, or memorial of a departed friend; and from the figures we have sometimes seen upon the persons of the natives, and the conversation we have had, we should be induced to think it was designed as a kind of historical record of the principal actions of their lives." Wilson[1] tells us a little more: "In the tattooing of men and women there is a small spot on the inside of each arm, just above the elbow, which is a mark of distinction, and shows that such a person may eat or touch his father's and mother's food, without rendering it rāa, or sacred; it is a sort of seal, that all the amōas have been performed. This is generally received when the head is made free, which is the last amōa, except that of friendship and marriage." I am inclined to think that Wilson was nearer getting at the truth about the origin of the tatu than any other of the writers. As regards the women tatu seems to have been a rite which they were bound to undergo. As mentioned above, R. J. Forster says the arches on the buttocks of the females "are honourable marks of their puberty,"[2] and elsewhere, he writes: "When we were the second time at O-Raiedra, the chief of O-Tahā, called Boba, came frequently to visit us; one day being on board, he saw his sisters coming towards the ship in a canoe, and pointing to his younger sister, desired me as soon as she came on deck to say to her, *Veheina poowa;* I did so, not knowing what would be the consequences, and her elder sister immediately lifted up the garments of the younger, showing that she had the marks of puberty. When she had done this two or three times, she refused to go through the same ceremony again. I then inquired more carefully into the meaning of this transaction, and learnt that in these isles it is a kind of reproach, or want of dignity not to be of age, and to be destitute of the marks of puberty. As soon as they appear, the young women are obliged to undergo a very painful operation, viz., to have large arched stripes punctured on their buttocks; these curious marks are reputed honourable, and it is thought a mark of pre-eminence to be capable of bearing children. If therefore a man should reproach the person with the deficiency of these marks, she cannot in honour avoid refuting it by ocular demonstration."[3] If this interpretation be correct it will doubtless clear up a passage recorded in *Cook's Journal,*[4] which has so far appeared inexplicable to every one who has read it. It refers to a young woman, who having presented Mr. Banks with some plants, "with as much decency as one could possibly conceive, exposed herself entirely naked from the waist downwards; in this manner she turned herself once or twice round and dropped down her cloaths." The ceremony was evidently meant to convey to Banks the fact that she was an honourable woman, which fact enhanced the value of the gift.

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[1] p. 117.

[2] *Voy.*, 1777, I, p. 291.

[3] *Voy.*, Lond., 1777, II, p. 129.

[4] *Authentic Narrative*, I, p. 159.

THE DECAY OF THE ART.

The decay of the art appears to have been due to the missionaries. Ellis tells us,[5] "The simple act of tatuing or marking the skin, was in itself no breach of the peace, but it was connected with their former idolatry, and always attended with the practices of abominable vices, and on this account was prohibited," and later on,[1] "On account of the immoral practices invariably connected with the process of tatauing, the chiefs prohibited it altogether, and, excepting a few foreign seamen, who often evinced as great a desire to have some figure tataued on their arms or hands, as the natives themselves, there had not been an individual marked for some years." The chiefs, as we know these people, would be the last to prohibit the practice of the custom from a moral point of view, so we can only look upon them as the instruments of the missionaries. The missionaries may have been justified; nevertheless, we must be sorry that a custom should be wiped out before its origin has been established, and so leave us with only half a story. Bennett, from whom I have already quoted, writes:[2] "The ancient practice of tattooing the skin is gradually declining among the Society Islanders generally. The missionaries have been much opposed to the custom, and among the laws framed for these islands was one which made tattooing criminal; but this has been since repealed, or continues in force only in the islands of Huahine, Raiatea and Tahaa. When viewed in connection with the habits of the natives, tattooing is not, certainly, so innocent a display of savage finery as most Europeans imagine it to be; nevertheless, we felt much regret, not unmingled with indignation, when we beheld, in the house of the royal chief of Raiatea, a native woman, of naturally agreeable features, disfigured by an extensive patch of charcoal embedded in her cheek—a punishment inflicted upon her by the judges for having slightly tattooed herself. While we were regarding this spectacle, a second female showed us her hand, which afforded a similar instance of judicial severity; we could only cling to the hope that British missionaries had not given sanction to such barbarities." In Kotzbue's time "the missionaries had abolished the custom."[3] Walpole, writing in 1850, says, "The art is much lost, for the missionaries have discouraged it; but there are few even now that are not marked, though all knowledge of the mysterious arrangement of it and of the different sorts, to each class, is now lost. The men have the whole of their bodies, from just below their knees up to their necks, tattooed; the women the loins only. I mean those that were done under the old system. Now a few dots of faint lines under the lip or on the hand, done in wild mood, is all they have; but no doubt each mark expresses something to the initiated."[4] Berchon, describing his visit three years later, remarks, "We had much difficulty in finding in 1853 the tatu arches (*dessins en arcs*) printed on the buttocks, loins and sides of the abdomen up to the false ribs, which made the women of Tahiti so proud in the time of Cook."[5]

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[1] p. 339.

[2] pp. 433–4.

[3] As a somewhat analogous custom he quotes *Herodotus*, V, ch. 6, "The Thracians: to be punctured they thought a mark of nobility, to have no punctures, that of being basely born."

[4] Wharton's *Edition*, p. 73.

[5] II, p. 463.

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[1] p. 446.

[2] I, p. 117.

[3] I, p. 175.

[4] pp. 312–313.

[5] *Bull. Soc. d'Anthrop.*, 1860, I, p. 116.

Explanation of Plates.

Plate XXIII. Fig. 1. Tatued buttocks and loins of natives of Tahiti. From the Cook Expedition drawings in the British Museum.
Fig. 2. Portrait of a Tahitian with tatued chin. After Parkinson.
Fig. 3. Tatued man of Oheteroa. From the Cook Expedition drawings in the British Museum.
Fig. 4. Portrait of John Rutherford, evidently tatued in New Zealand (face), Tahiti (body and wrist), and perhaps Rotuma (chest).
„ XXIV. Figs. 1–3. Tatued skin of a Tahitian who died in London in the year 1816. Preserved in the Museum of the Royal College of Surgeons, Lincoln's Inn Fields.
„ XXV. Figs. 1 and 2. Tatu mallets. British Museum.
Figs. 3, 4 and 4a. Tatu instruments. British Museum.
Figs. 5 and 6. Tatu instruments. Cook Collection, British Museum.
Figs. 7 and 8. Tatu mallets. Cook Collection, British Museum.
Figs. 9–11. Tatu instruments and mallet. After Parkinson.

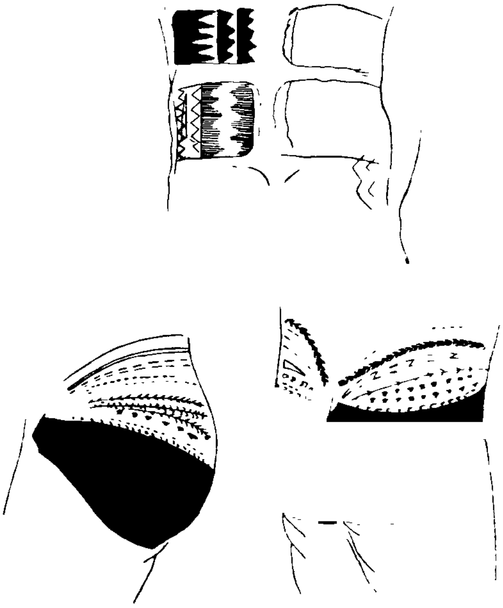


FIG. 1.

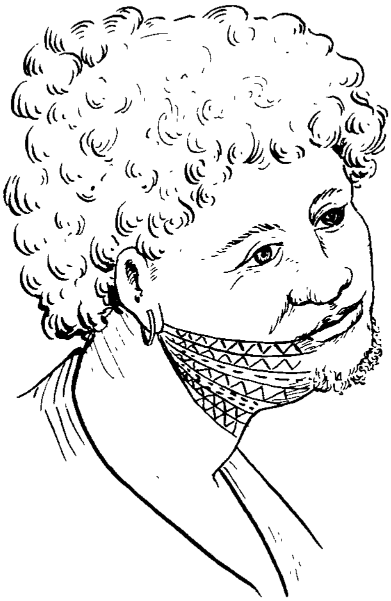


FIG. 2

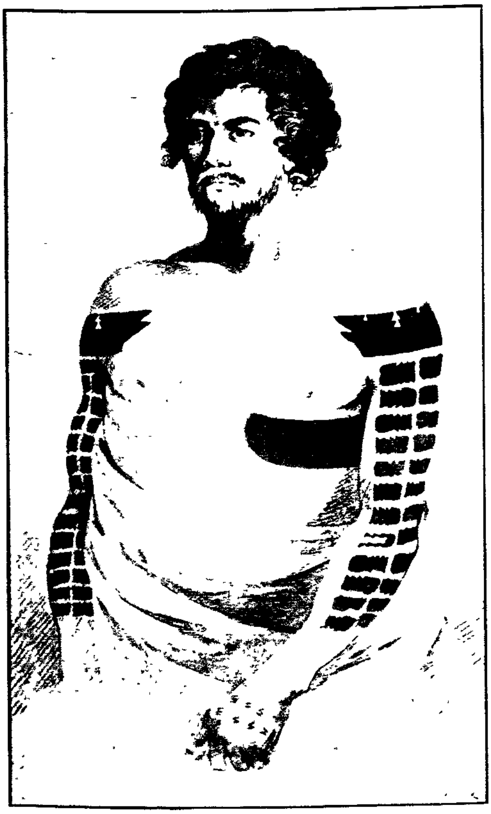


FIG. 3.

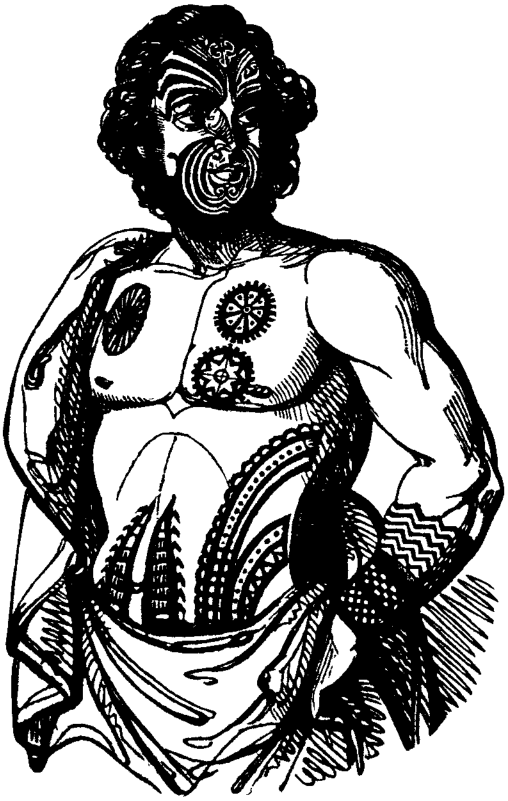


FIG. 4.

TATU IN THE SOCIETY ISLANDS.

Journal of the Anthropological Institute, Vol. XXXV, 1905, *Plate XXIV.*

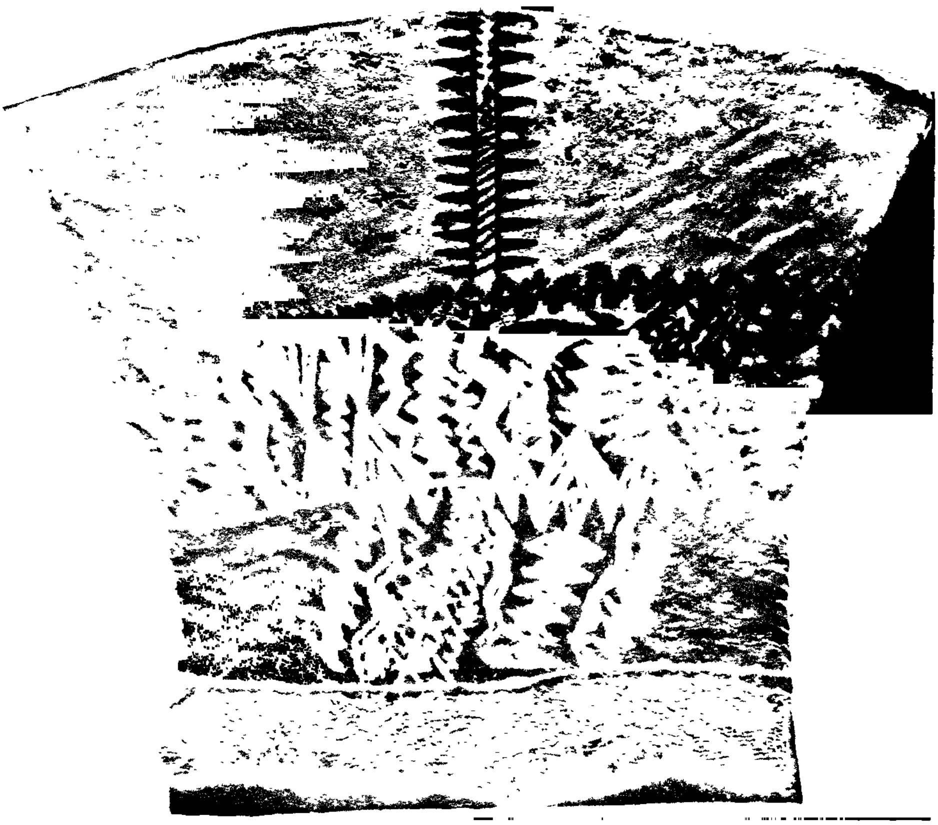


Fig 1.

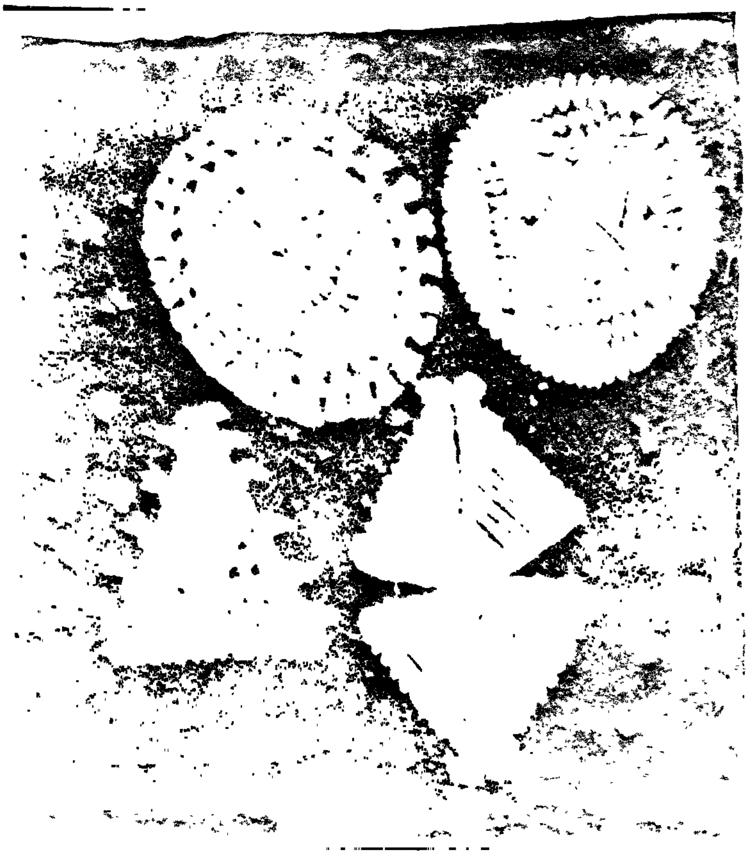


Fig. 2.

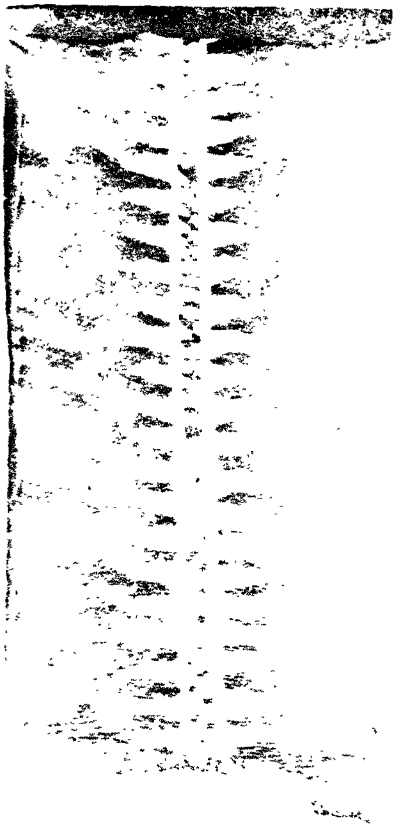
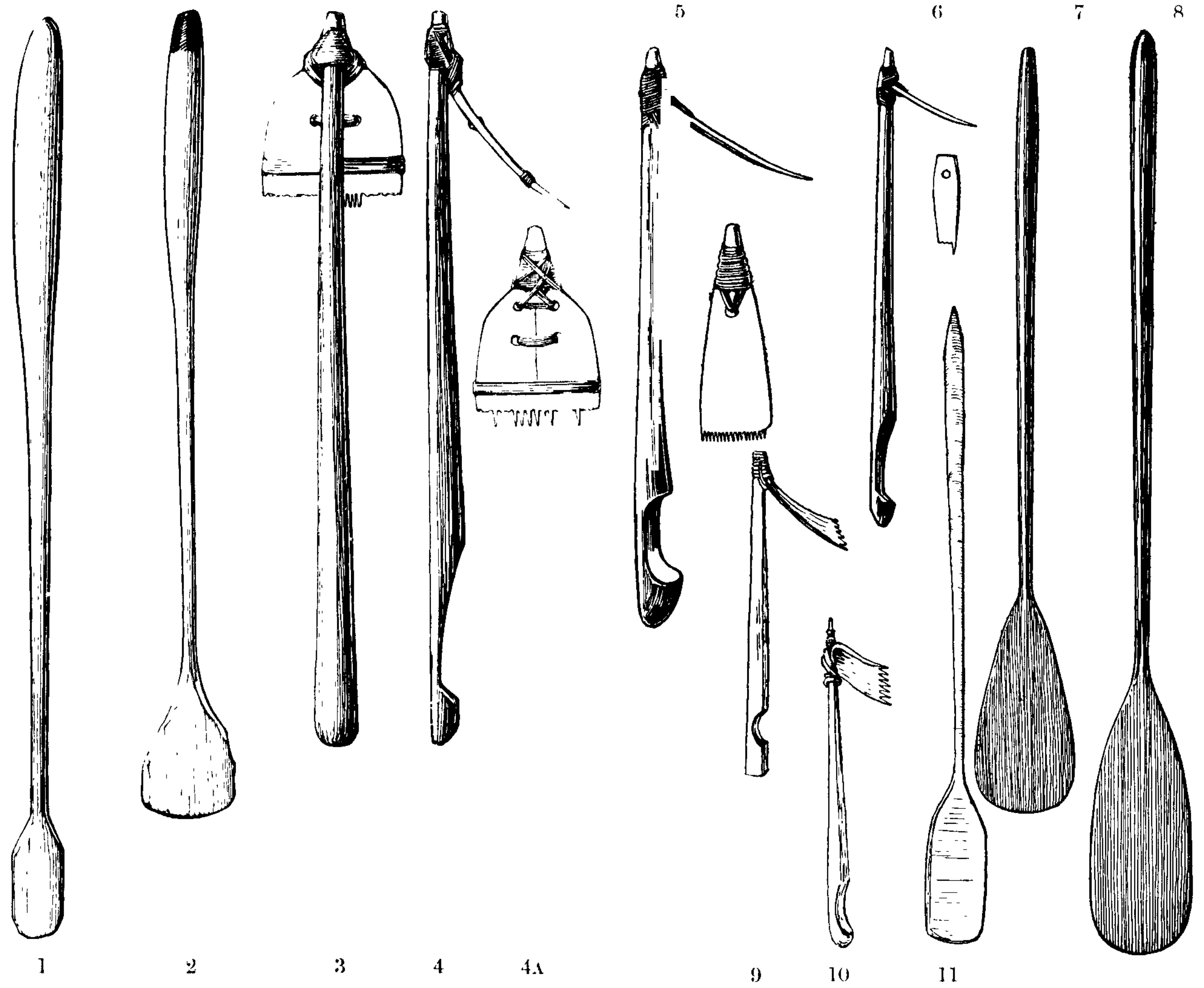


Fig. 3.

TATU IN THE SOCIETY ISLANDS.



TATU IN THE SOCIETY ISLANDS.

NOTES ON THE TOTEMISM OF THE BECWANA.

By the Rev. W. C. Willoughby,

Local Correspondent of the Anthropological Institute.

The word Becwana is usually applied to the tribes that inhabit the Becwana Protectorate, and that portion of Cape Colony that is north of the Vaal River, together with isolated communities that are found in certain parts of the Orange River Colony and the Transvaal. These tribes speak the same language with certain minor differences of dialect, and have substantially the same customs and folklore. But they speak of themselves only by their several tribal names, and have no one name for their language, country or tribal group—I hesitate to say nation. We call them Becwana, and we call their language Secwana;[1] and these terms are now in common use among the people. But they say they learnt these names from us, and have merely adopted the white man's terminology. But however that may be, the word is now in general use, and is definite enough for all ordinary purposes. Only it should be remembered that the name lacks scientific precision, and if one wanted to be very exact, one would have to call each tribe by its tribal name.

These tribes may be divided into four main stocks:[2]—Batlhaping, Barolong, Bahurutshe, and Bakgalagadi. The Batlhaping and the Barolong are divided into a number of small and independent tribes, called usually by the personal name of their founder in addition to their proper tribal name. The Bakwena are of Bahurutshe origin, as is evident from their title Bakwena a Malope; and the Bangwaketsi and Bagamañwato are offshoots of the Bakwena tribe. Bakgalagadi tribes are, as Livingstone says, "traditionally reported to be the eldest of the Becwana tribes, and are said to have possessed enormous herds of large horned cattle until they were despoiled of them and driven into the desert by a fresh migration of their own nation." They are now the serfs of the tribes already mentioned. These people live in small communities and in remote parts of the country, and consequently we know less of them than of the tribes already mentioned. A patient and intelligent study of their customs, folklore and peculiarities of speech, would doubtless yield rich results; and it would perhaps prove among other things that I am not justified in grouping them together as belonging to one main stock. There are other Becwana tribes of which I know practically nothing, such as the Bakgatla of the Protectorate and a number of tribes living on the Transvaal side of the Crocodile River, and it is possible that these tribes belong to other groups. In the north the Becwana shade off into the Banyai. The Batalaote section of the Bamangwato, for instance, are undoubtedly of Banyai origin, though they are now Secwana in speech, custom and sentiment; and it is doubtful whether such tribes as the Bapedi and Bomogoma belong rightly to the Secwana or the Senyai group; though I am inclined to group the Bomogoma with the Barolong. I am not familiar with the south and south-eastern borders of the Becwana country, but I should expect to find there tribes that shade off into the Basuto.

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[1] On the Pronunciation of Secwana.—Pronounce "a" as in *father*; "e" as in *bet*; "è" as in *there*; "i" as "ee" in *deep*; "o" as in *no*; "ō" as "ou" in *ought*; "u" as in *rude*; "c" as "ch" in *church*; "g" as the Scotch pronounce "ch" in *loch*; "kg" is a much harder guttural than "g"; "ñ" as "ng" in *sing*; "ny" as "ni" in *senior*; "tl" as in *shuttle*; "ts" as in *mats*; "h" aspirates any consonant that it follows: thus "ph" is not "f" but an aspirated "p," and similarly with "th."

The accent is always on the penult, except that when a word ends in "ñ" the last syllable takes the accent.

[2] Since writing this I have found strong evidence that the Barolong are a branch of the Bahurutshe stock, and that at least a considerable portion of the Batlhaping are an offshoot of the Barolong. I will furnish a note on this subject when my investigations are complete.—W. C. W.

Now each of these tribes has its tribal totem, and every small boy can tell you what his tribal totem is.

But first it may be as well to say something about the words that are used for the expression of the totem idea. There are two nouns and two verbs. The noun *serètō*, means *tribal totem.* But there is a verb *Go rèta* which may help us to a better understanding of the noun. Let me give an illustration. An old friend and mentor of mine is named *Modimoecho*, which by interpretation is "God of our fathers." Now one can hardly imagine parents giving such a name to their child. But it arose in this way. Before Modimoecho was born, his father had two wives, but they both deserted him, taking their children with them. His friends advised him to insist upon the return of the children, but he was a peaceable old man and refused to fight the matter out. Some time after he took a third wife; but his friends sneeringly told him that he was too old to raise up another family. This hurt him much, and when in due time a son was born, the old man exclaimed in his delight, *Modimoecho ga a laolwe!* (The god of our fathers is not restrained!). The boy was henceforth called by the first word in the expression—"Modimoecho." The new wife was much younger than her husband. She had come from a distant home, and she had come into an uncongenial circle. She was a tender-hearted and sympathetic woman, and had been feeling very lonely and home-sick in the house of her husband. And when the son came, she exclaimed, "*Becobatsile!*" (My friends have arrived!). Now the name of the boy is Modimoecho. But old and intimate friends would be wise enough to complete the sentence by saying "*Gaolaolwe.*" Or they might use the mother's exclamation "*Becobatsile!*" And to use either of these names would be to *rèta* him; these two names would be his *marètō.* The very mention of them would be tantamount to saying, "I am your old friend and your father's friend," and it would soften his heart. Perhaps one is justified in concluding that the word *serètō* carries with it something of old and tried friendship. But this is the technical Secwana term—if the expression may be permitted—for the tribal totem. The verb is rarely used in that connection.

Then there is the noun *seanō* which is used as a synonym for *serètō.* Among the main Becwana tribes, the verb *go ana* is not in common use, but I have met with it in remote country districts, such as the Cwapon Hills. And there *go ana mmutlha* is a common phrase for having the hare as a tribal totem. But all the Becwana tribes are familiar with the verb *go ikana,* which means to swear; and *go ikana* is merely *go ana* in its reflexive form. Then we have the causative form of *go ikana* in *go akanya,* to trust. And from this again, we have the noun *boikanyō,* trust, and *boikañō* from the passive form of the same verb, which means trustworthiness. So that one concludes that *go ana* really means to make sacred; and *seanō* the sacred thing. But the point here is, that *seanō* is another technical term for the tribal totem. And it may be well to mention that it is still customary to swear by the tribal totem, though it is scarcely regarded as one of the highest oaths.

But the commonest phrase is *go bina. Go bina phuti* means to have the duyker as a totem. But *go bina* means to dance. Now singing and dancing were inseparable to the thought of the old Becwana. When they sang songs about their cattle, or their friends, or their chief, and danced in the moonlight—as they are still fond of doing—they were said to *bina* their cattle, or their friends, or their chief. So that *go bina,* though it is not relative in form, seems to carry with it the relative meaning of "to dance to." But I have heard a few Becwana argue that the verb should be used in relative form, when it is used in this connection, and in its simple only when it refers to the tribal totem, or when it governs some such word as "song" or "dance." But I observe that their habit is stronger than their argument. The point here, however—let me say it again—is that *go bina phuti* (to dance to the duyker) is the ordinary phrase for having the duyker as a tribal totem.

The only other verb that calls for remark in this connection is the verb *go ila.* Now *go ila motho* is to hate a person, and the noun *kilō* is the common noun for hatred. But it is possible, I think, that *go ila* is really the reflexive of the relative of the verb *go ea,* to go—one of those monosyllabic verbs that abound in irregularities; and if that is so, its radical meaning would be to take oneself away from, that is, to avoid. And one can very well see how a verb with that primary meaning should be used of avoiding, or refusing to eat, the tribal totem; and how it should come to mean hatred in common speech.

I have mentioned these words because I think they are of value in determining the relationship of the tribe to its totem. They seem to prove of themselves that the totem was a sacred animal, an old and tried friend, that its worshippers (if I may use the word for want of a better) did not hunt it and eat it or wear its skin, but on the contrary avoided it; and that they sang songs and danced in its honour.

And this corresponds exactly with what we find in the customs of the people, except that I have found no traces of dances in its honour. In the old days there is no doubt that the totem was regarded as the supernatural friend and ally of the tribe, that it was respected and protected, and that men swore by it as by a sacred thing. But this sacredness had begun to vanish before the white man came. An old friend of mine tells me that about sixty years ago, or more, in a time of great hunger, the Bamangwato organised a great hunt; and among the game found in the game pits they found a number of duykers (which was the totem of the tribe). But the hunger was so great that they ate the flesh of these animals, though they were careful to protect themselves from harm by rubbing the flesh with certain medicines. At that time if a herdsman killed a duyker in his game trap, it was customary for him to prepare a cord of bark, or anything else that was convenient; slip it round the buck's neck with a long stick; and drag it home to be eaten by those who venerated some other totem. But he would not eat it himself or even touch it. I know a young fellow in Mangwato who is about 33 or 35 years of age. His father is a most intelligent man; but he told me that when his son was a baby they took him to the home of his maternal grandfather, who venerated another totem. The grandmother, without thinking, wrapped the child one cold day in a duyker skin mat; and the consequence was that the child's head was covered with sores, which they were unable to heal. They took the child to a doctor of the Matalaote tribe, eventually, and he cured it by applying the fur of a duyker to the sores. Space will not permit me to multiply instances, which I could easily do, but these are enough to illustrate the common attitude of the tribe to its totem.

Up to the present I have failed to find the slightest trace in Philology, Customs, or Folklore, of any sacrificial rite connected with the totem-animals of these tribes. But, presently, I shall draw attention to certain survivals of an earlier totemism, and in connection with them we shall find the sacrificial meal and other sacrificial acts. But before passing on to that subject, it may be as well to say something about the particular totems of the various Becwana tribes.

The word *Batlhaping* means The-people-of-the-fish (*tlhapi,* fish). The Batlhaping are now divided into a number of subordinate tribes, each of which takes the name of the chief under whom they divided off from the parent stock. They are to be found in the country lying between the Vaal and the Molopo, and extending in the other direction from the Western Transvaal to the Kalahari Desert—a country in which there are few streams and certainly no rivers; and it is evident that the original Batlhaping must have come from a very different part of Africa. One notices also, that though the totem is said to be a fish, it seems to include everything that lives in the water.

There are five main sections of the Barolong, each of which calls itself by the name of the chief, under whom it divided off from the parent stock after the great civil war at Disaneng. And some of these sections have subdivided again into small and isolated communities. Their totem is sometimes said to be *tsipi* (iron) and sometimes *noto* (the hammer), and the word Barolong connects them with the hammer. Now a totem of this kind needs much more explanation than a totem animal; and I am sorry that I have had no opportunity of inquiring into what is probably a very interesting question. In the Northern Protectorate there are several small communities of a tribe called the Bomogoma (The-people-of-the-hoe). Their totem is the garden hoe. But they, too, sometimes say that their totem is *tsipi* (iron). Whether there is any tradition connecting these people with the Barolong, I was unable to discover. All the tribes that have animal totems refuse to touch the totem animal, and I inquired how these people cultivated their gardens if they refused to touch the hoe. They replied that it was strictly correct to use the hoe for gardening, but that it was profanation to use it for any inferior work, and that it would be a very serious thing to strike a dog with it.

Among the tribes belonging to what I have ventured to call the Bahurutshe group there are many totems. The original Bahurutshe had two totems, the eland and the hartebeest. They would not touch the hartebeest, but the only part of the eland that they held sacred was the *leshilo,* which they described as the fat around the heart, and one section of the tribe, though still adhering to the old totems, thought it right to eat even this. They differentiated between the two totems by saying, "*Pinō ke ḱgama serètō ke phofhu,*" that is, "The dance is to the hartebeest; the veneration is for the eland." That section of the Bahurutshe tribe which now lives at Gopani's and Ikalafheñ's have broken with their old tribal totem, and now venerate the baboon; and I am told that a small section of the Bo-mowatshe Bahurutshe venerate the wild boar as a subsidiary totem, without neglecting their old tribal totems, the eland and the hartebeest. But the Bakwena are evidently of Bahurutshe origin, and their totem is the crocodile (*kwena,* crocodile). The Bangwaketsi are a junior branch of the Bakwena, and still venerate the Bakwena totem, but the Bamangwato, a still younger branch of the Bakwena, venerate the duyker.

Among the Bakgalagadi tribes of the Northern Protectorate, the Bakaa and the Bapedi occupy the foremost position. The Bakaa were once lords of the Shoshong Hills, but were conquered by the Bamangwato. They venerated the elephant, but they say that they are of Barolong origin and that their ancestors venerated the hammer. One finds a number of hamlets in various parts of the country round the Shoshong Hills that say they are Bakaa, but have different totems. And one wonders whether they are really Bakaa by birth, or whether they were merely assimilated by the Bakaa tribe in its powerful days. The Bapedi in their best days were lords of the Cwapoñ Hills, for which reason they are now spoken of as Macwapoñ. They are now scattered over the country between the Shoshong Hills and the Maitengwe River, living always in small communities. Their totem is generally said to be the hare, but a desire for exact information elicits the fact that the real totem is the mountain-hare. Some Bapedi communities living in the Tati Concessions territory venerate other totems, such as the lion; but those who venerate the hare bore the ears of their children when the latter are about 12 years of age, both the boys and the girls. And sometimes if a woman has lost several children in infancy she will be afraid to wait so long, and will bore the baby's ears before taking it outside the house. There are also a number of tribal fragments living all over the Western Protectorate, having totems of their own, and, as usual with rural communities, customs that are extinct in the larger centres of population. In the interests of Anthropology, it would be well if these people were studied before it is too late.

Of the present-day totems there are two that call for special remark—the crocodile and the hare. The crocodile is held in respect by every Becwana tribe, even by those who do not venerate it as a totem. It is commonly believed that if a man wounds a crocodile, the man will be ill as long as the crocodile is ill of its wound; and that if the crocodile dies, the man dies too. And here it may be of interest to state that I found this belief very general among the Wanyamwezi, who, in 1882, were living under Mirambo, about 200 miles south of the Nyanza and 100 east of Tanganyika. As for the hare, there are hundreds of tales concerning his adventures, with which every Mocwana mother is familiar; and they all go to show that he is the "slimmest" of all the animals. And one occasionally sees a Mocwana wearing a hare's foot as a charm, though he himself may venerate some other totem.

But though totemism is universal among the Becwana tribes, and every small boy knows what his tribal totem is, yet it is decadent. In all Becwana communities, and especially in the rural communities, there are a few people who would refuse to eat the flesh of the totem animal, or even to touch its skin. But they are comparatively few, and, as usual where totemism is decadent, myths are invented to explain the relation of the tribe to its totem. The Becwana, unlike the Greeks, have never felt it necessary to harmonise the old totemism with any newer religion; and the myths are of a non-religious character. They are generally mythical explanations of how the tribe came to possess its totem. The Bamangwato, for instance, are of the Bakwena stock, and yet they venerate the duyker, while other branches of the same stock retain the totem-crocodile, from which the tribe takes its name. The Becwana feel that that needs explanation. Hence the following: The original ancester of the Bamangwato tribe, Ñwato by name (*Ñwato* means the under-cut of a sirloin of beef) was once hard pressed by his foes. In his extremity he hid in a thicket. His pursuers had seen him but a little while before, and as he was now nowhere to be seen, they surmised that he must be in hiding; and they approached the very thicket, intending to examine it. Just as they approached, however, a duyker sprang out and bounded away. Upon this one of them remarked that a man and a duyker could not hide in the same thicket, and the party went on. Henceforth, says the story, the chief took the duyker for his totem.

Again, the Bahurutshe totem is the eland and the hartebeest, but a section of the tribe, though it still retains the tribal name, venerates the baboon. And that needs explanation. A certain chief of the Bahurutshe tribe captured a young baboon and tamed it. One day his son loosed the baboon to play with it, and allowed it to escape. There had already been much friction between the son and the father, and this was the climax. The father gave the son a sound thrashing.

The son promptly retaliated by seceding and calling upon his followers to follow him. They formed a township of their own and adopted the baboon as their totem.

Another section of the Bahurutshe, called the Bomakgane section, venerate the wild boar as a subsidiary totem, in addition to their old tribal totem, and for this reason, so it is said. The chief, Makgane, was childless; and almost despairing of a son, he called in a celebrated doctor from a neighbouring tribe and asked him to cure his wife of her childlessness. The doctor venerated the wild boar. And having administered his medicines, he assured the chief that a son would be born, and ordered that the son and all his descendants should venerate the wild boar. The son was born and the subsidiary totem was taken.

Now it is often held by totem tribes that the tribe and the totem have descended from a common ancestor; and the ancestor is generally the totem animal. But of this belief I can find no trace among the Becwana; unless it be, perhaps, the one solitary custom of applying the name of the totem animal to the chief as a term of respect. This is universal among the Becwana tribes. If you were in agreement, for instance, with something that Chief Khama had just said to you, it would be highly respectful to say, *Èè, phuti!* (Yes, *duyker!*) And similarly, if you were addressing the Chief of the Bakwena, you would say *Èè, kwena!* (Yes, crocodile!). But I observe that there is a tendency to tone this down into a more personal form, saying *Mokwena* instead of *Kwena! Motlhaping!* instead of *Tlhapi!* And so on. In the case of the Barolong, one never hears anything but *Morolong.*

Now to sum up this portion of my paper, I beg to call attention to the following facts:—That the present totems of the Becwana are very loosely connected with the rites and customs of the tribes; that they take no place in any ceremony connected with birth, death, circumcision, war or famine; that there is no hint of any sacrificial meal or other sacrificial rite in connection with any one of these totems. From this I argue that the present totems are of comparatively recent date; that when they were adopted by the Becwana, an older ritual was in secure possession of the field; and that the newer totems have failed to modify this older ritual even in the slightest degree. That this older ritual is totemistic, I am quite convinced. And, as far as the space at my disposal will permit, I shall try to indicate the reasons for my belief. I hope to show that in all probability the totem animals and totem plants which gave birth to the most characteristic rites of the Becwana tribes have been domesticated by the people.

And first let me deal with the cattle. As soon as one becomes familiar with the general arrangement of a Becwana town, one notices the prominent position of the cattle kraal. The great place of public assembly is really a large cattle kraal surrounded with a circular fence of stout and strong poles; and the cattle kraal of the chief's herds opens directly into this place of assembly. One feels that it is not mere accident which has brought the cattle kraal into this close connection with the place of public assembly. It is in this place that the public business of the tribe is transacted; here all the ordinary public assemblies are held, all the assemblies, in fact, except those that are attended with arms; here, at daybreak, the chief administers justice; here are held the rain-making rites, the ploughing rites, the new year purification rites, the rites in connection with the purification of warriors, and even some of the final rites connected with the initiation ceremonies for boys and girls. Here all messengers from the outlying districts will await the pleasure of the chief, and to this place every visitor at once proceeds. There is scarcely an hour in the day when one may not be quite sure of finding a little group of tribesmen there, either talking to the chief or waiting his return. And in the old days, if a chief wished to take a person aside for confidential conversation, he usually took him into the cattle kraal proper. And here, when the chief's work is done, they lay him finally to rest just within the entrance to the cattle kraal. One naturally enquires the Secwana name for such a place, and one learns that it is called *kgotla*. And when one hears that the Secwana word for chief is "kgosi" and that for cattle "kgomo," one thinks of what Max Müller has said about the Sanscrit root "go" and its derivatives, and one wonders whether a subject like this would not amply repay philological investigation. But that is another subject—I am speaking only of extant rites and their significance.

If one sits in the "kgotla" for a little while and listens to the phrases with which visitors greet the chief, one notices that he is most frequently addressed by the name of his totem animal, but that other forms of greeting are not uncommon; and that among others he is called *Mocwadikgomo!*—"one who came forth from cattle"; and I have occasionally heard *Moñadikgomo*, "master of cattle," which, though not so suggestive as *Mocwadikgomo*, still shows that the possession of cattle is honourable enough to be used as the greeting of a chief.

But there are other customs that show how intimately the chief is connected with cattle in Becwana thought. Let me give an illustration. In 1860, or 1861, there was a great drought in the country of the Bamangwato. Sekhome was chief and Sekhome was a great rain-maker. But the ordinary ritual for rain-making had utterly failed of its purpose. There was still another ritual that could be depended upon—a ritual too sacred to be used except in an emergency—the sacrifice of an ox on the grave of a chief. The tribe was at that time living at Shoshong, and a few miles away there was the grave of Mathibe, who is, perhaps, the oldest of their historical chiefs. Mathibe died among the ruins of his old town of Motseodule, disowned and deserted by his children and all but a handful of his people: moreover, he poisoned himself. But these things were of no importance. He died a chief and was buried in his own cattle kraal. So Sekhome gathered together all the members of his own tribe, men, women and children, carefully excluding all who were not of pure Bamangwato descent; and they went forth to Mathibe's grave. Then they took a black ox, which had been carefully selected, one without a trace of any other colour, and slew it on the grave. The people meanwhile all crowded round. This ox was cooked on the spot, though I cannot be sure that it was cooked whole. When it was ready, the people each ate a portion of it, beginning with the highest born and proceeding according to seniority. It was important that everyone should have some of the meat, and it was important that every particle of flesh should be consumed upon the spot. Such things as could not be eaten were otherwise disposed of; the skin and the contents of the entrails were buried in the grave of the chief; but the bones were burnt to ashes in the great fire which they had lit upon the grave. When the animal had been thus disposed of, prayer was offered:—"Re tsile go kopa pula ka kgomo eno, ke eo, Kgosi, Rraecho!" ("We have come to beg rain by means of this ox; here it is, O Chief, Our Father!") And they sang the rain songs, and danced around the grave. Then they raised a great shout, "Pula! Pula! Pula! Kgosi, re shule re le batho ba gagō." ("Rain! Rain! Rain! Chief, we are dead—we who are your people.") And they returned home, singing as they went—

"Kololo a èè, e ka ka ea komakoma;
Kgomo co moroka di letse di sa nwa,
Megobyane e kgadile."

(Let the klipspringer go, and may the rain drip;
The rain-maker's cattle drank nothing yesterday,
The pools being dry.)

"That same evening," my informant continued, "the rain fell heavily."

Nor is this the only occasion which needs the sacrifice of an ox. At the founding of a new town, for instance, there is an elaborate ritual. A bull is selected from the herd, and its eyelids sewn together with sinew. Sinew is the common sewing material for karosses and skin garments; so it may have no significance here. But the Becwana sew with an iron needle which has no eye, and is really a very fine awl; and this is no modern invention. Here, however, the ritual demands a wooden needle, and the wood must be of the *mhatlha* tree (the Vaal Bush). After the bull's eyelids are sewn together, the animal is allowed to wander at will for four days, and no notice is taken of its movements. On the fifth day the people take up its spoor and follow till they find it. Then appropriate medicines are prepared. And at sunset on that day the bull is sacrificed on the spot where it then happens to be standing. The carcase is dressed in the usual manner and is roasted whole, care being taken that the flesh on the breast under the forelegs shall be done before the remainder. This is the chief's portion; and when cooked it is sliced off and handed to the chief. When the chief has eaten his portion, the carcase is divided among the people; and the ritual demands, again, that every particle of the animal shall be consumed upon the spot. The whole ceremony is, of course, in the hands of the greatest doctors of the tribe; for among the Becwana the great doctors are always the priests, though you may occasionally find a man who does a little with herbs and is yet ignorant of the ritual for the great ceremonies. After the sacrificial meal, the doctors take the skin of the animal and mark it with appropriate medicines. The correct markings and the composition of the medicines are, of course, their professional secret. When the Becwana cut a hide into thongs for every-day use, they begin at the circumference, and with one long spiral cut they produce a long thong which is equal to the whole hide. This marked hide is treated in precisely the same manner, and the long thong is cut roughly into lengths of about two feet. Messengers are then despatched in all directions to peg down one of these strips in each of the paths leading to the new township. "After this," it is said, "if a foreigner approaches the new town to destroy it with his charms, he will find that the town has prepared itself for his coming."

There is a somewhat similar ceremony in preparing an army for battle, though into this, apparently, the representatives of the cereal totems have been admitted. When the army sets forth for war, it assembles somewhere in the veld, and there come to it a doctor and a woman bearing a winnowing fan (*losèlō*). The woman hurries up, shaking her winnowing fan, keeping her eyes shut, and crying, "The army is not seen! The army is not seen!" The doctor sprinkles medicine over the spears, crying out in the same way, "The army is not seen! The army is not seen!" After this they seize a bull, and sew up its eyelids, as before described, except that in this case the eyelids must be sewn up with a hair from its tail. Then the bull is compelled to take the road that the army means to follow, and is driven on for some little distance. After it has preceded the army for a little way, it is sacrificed, roasted whole, and eaten by the army. Here again the ritual is particular that every particle shall be consumed at the spot where it is sacrificed. Such parts as cannot be eaten are consumed with fire. But the contents of its stomach are carefully preserved, and this is the charm that is to lead the army to victory. Men are selected from the army, trusty men, whose one business during the campaign will be to carry this charm in front of the army. When the army is on the march, they march some distance ahead, and it is highly important that no person should precede them. When they stop, the army stops, and it will not again march until it sees that they have moved forward.

Here, it seems to me that we have an illustration of the idea that the clan-god was the leader of the clan in war. It seems to have been a common conception in early totemism that only the god could be offered as a sacrifice to itself; and here we have an illustration of that conception. The marks of a true sacrifice are noticeable. There is no altar, it is true, but the sacrifice must be eaten on the spot: all the community must partake; the whole victim must be consumed; and the remains must be consumed with fire or buried, and in one case the sacrifice must be offered at sunset.

There are many hints that the people regard themselves as being descended from the totem god. I do not mean that the conception is in the thought of the Becwana of to-day, but that it is in the custom. I have already mentioned the fact that one of the salutations of a chief is *Mocwadikgomo* (one who came forth from cattle). And there is a similar idea with regard to the members of his clan. When the army returns from war, if they return victorious, they come singing the *Moèpèlane* songs, which are songs of rejoicing. The people go out to meet the returning regiments, and the women welcome them with a shrill trilling cry.

The regiments assemble in the great kraal, or place of tribal assembly, and sing the *kōma* songs, which are regarded as a tribute to the slain. Women crowd up to the entrance, but may not pass the threshold. Then the names of the slain are recited; and after each name the wail for the slain is raised; "*Motho yo! Motho yo! yo! Ke tla lela wèi!*" ("Person alas! Person alas! alas! Oh, I will weep!") But oftener than not the wail is rendered "*Kgomo yo!*" instead of "*Motho yo!*" ("Ox alas!" instead of "Person alas!"). And the substitution of the word ox for person is evidently thought more complimentary to the dead.

Sometimes the chief summons his warriors for a great hunt. Upon such occasions the regiments referred to in the summons will meet at the "great kraal" on the following morning. The man who happens to reach the "great kraal" first is expected to summon his sleeping comrades. He ascends the "herald's tree, or stump," which is usually to be found in the kraal, and shouts out his summons. And this is the usual form of the summons: *Bii! Bii! Bii! A re eeñ go bolaea diphōlōhōlō, Merole e menana!*" (*Bii! Bii! Bii!* Let us go to kill the game, O you great herd of young calves!) And it is thought complimentary for the member of a regiment to use such a phrase towards his equals.

In the purification of warriors, too, the ox takes a conspicuous part. The warrior who has slain a man in the battle is unclean, and must on no account enter his own courtyard, for it would be a serious thing if even his shadow were to fall upon his children. He studiously keeps himself apart from the civil life of the town until he is purified. The purification ceremony is significant. Having bathed himself in running water, or, if that is not convenient, in water that has been appropriately medicated, he is smeared by the doctor with the contents of the stomach of an ox, into which certain powdered roots have been already mixed, and then the doctor strikes him on the back, sides, and belly with the large bowel of an ox. The cattle that have been captured by the army are divided by the chief, who will retain some for himself and his relatives, distribute the others among the brave, and set aside the remainder for a feast. The festal cattle are killed and cooked in the *kgotla*; and they may be roasted or stewed in fat; perhaps portions will usually be cooked in each way. The people of the tribe gather together for the feast, but the army keeps itself apart from the crowd. A doctor takes a piece of roasted beef and cuts it into small lumps of about the size of a walnut, laying them carefully on a large wooden trencher. He has already prepared charcoal, by roasting the root of certain trees in an old cracked pot, and this he grinds down and sprinkles on the lumps of meat on the trencher. Then the army surrounds the trencher, and everyone who has slain a foe in the battle steps forth, kneels down before the trencher, and takes out a piece of meat with his mouth, taking care not to touch it or the trencher with his hands. As he takes the meat, the doctor gives him a smart cut with a switch. And when he has eaten that lump of meat his purification is complete. This ceremony is called *Go alafsha dintèè*, or "The purification of the strikers."

This taking of meat from the trencher without using the hands is evidently a matter of ritual. And one wonders whether it does not mean that the beef is too sacred to be touched with the hands. There is a similar requirement in connection with the purification of a woman after child-birth. A description of that ceremony would lead me too far away from my subject; so that it must suffice to say that in the midst of a considerable variety of ritual, a plate of medicated porridge is laid upon the hearth, and that the man and his wife approach the porridge from opposite sides and take five mouthfuls without using their hands, after which they sit down and finish the porridge in the usual way. This is the first time the husband eats with his wife after her confinement. And in the initiation ceremonies the neophytes have nothing but porridge for about a week after circumcision; and the porridge is served up in a large wooden dish, round which the neophytes kneel. Each boy has to take his porridge holding his left hand above his head, and, scraping off a portion with the side of his right hand, he conveys it to his mouth. It would be an offence against the ceremonies if the boy were to take porridge with his fingers as he has always been taught to do at home.

The similarity of the requirement in the purification ceremony for the woman is striking. And the fact that in the one case the sacramental food is beef and in the other porridge, is only what we should expect to find, for it is as natural that the cereal totem should survive in the purification of women as that the animal totem should survive in the purification of warriors.

This smearing with *moshwañ*, as the Becwana call it, that is with the contents of the large stomach or the intestines of an ox, is also noteworthy. To us, of course, the thought of such a thing is repulsive; but the Becwana look at it in a very different light. It was a common thing for old men sitting in the *kgotla* to send a boy into the cattle kraal proper to fetch them some cow-dung with which to wash their hands, and occasionally their faces. It is not so common now, but I have seen it more than once. The *dialogane*, or youths who have just returned from the circumcision ceremonies, are naturally fond of strutting about in all the glory and importance of their new-found manhood, and these youths lose no opportunity of washing their hands in cow-dung, and rarely forget their faces. It is evidently a sign of the manhood into which they have been so recently initiated. And small boys at the cattle posts, aping their elders, are very fond of mixing milk and cow-dung and smearing their bodies with it from head to foot.

If two brothers or friends have quarrelled and wish to become reconciled, they take opposite ends of a small twig, bend it and break it; and as each throws the broken end over his shoulder, he puts the fault of his reconciled enemy out of sight. But if two chiefs have quarrelled, there is a much more important ritual of reconciliation. At their meeting an ox is killed, and its stomach opened. Then each chief dips his hand into the stomach, takes a little *moshwañ* on the palm of his hand, grasps his reconciled enemy by the right arm just below the elbow, and draws the clasped hand down the arm till it is clasped in the hand of his friend. And as they clasp hands, they both exclaim "*Re chwaranye ka moshwañ.*" ("Our hands have met in the cow dung.")

In the Marriage Ceremonies, oxen take a very large place. The *bogadi* or marriage settlement, which the bridegroom's father hands over to the custody of the bride's family, consists exclusively of cattle. But there is nothing in all this that connects the marriage with any totemistic ritual. Among the Bamangwato, however, there is one significant custom; and I am told that it is not found in any other of the Becwana tribes. On such an occasion as a marriage, it is usual for the bride's father to kill an ox, and the animal is generally killed on the eve of the wedding. The *lomipi* or sheet of fat that is around the entrails of the ox, will be laid out carefully on some upright supports, so that it will set nicely and be free from grass or dirt. Next morning, when the crowd have assembled, some old women will take the *lomipi*, rub it with some appropriate medicine from the doctors, and lay it around the bride's shoulders. The exact significance of this is apparently lost, but correct procedure demands that the *lomipi* should be brought down as far as possible over the bride's bosom. And as the bride sits clad in this peculiar veil, some old man or woman will give the bride and bridegroom some appropriate advice, admonishing them particularly to tend one another in sickness, and warning the wife against stealing and bewitching. Mention may be made of adultery; but there is not much stress laid upon that, as it would only mean a thrashing from her husband, whereas stealing and bewitching are offences for which the wife may be returned in disgrace to her father, and the return of the marriage settlement demanded. Where the parents are too poor to afford an ox, the *lomipi* of some smaller animal will be used, but it is evidently felt that this is but a substitute for what cannot be afforded. The Bamangwato *binèla lomipi,* that is, they have a special song in its praise; but I have not succeeded in getting the words.

The marriage of a widower is preceded and attended with elaborate ceremonies of purification, which I shall not stay to describe. But in these ceremonies there is one point to which attention should be directed. Everyone is familiar of course with the taboo on mourners, and I need not draw attention to the fact that the widower is a mourner, and that contact with him might have very serious consequences. This elaborate ceremonial is designed to avert such a calamity. At all marriage ceremonies, at the conclusion of the wedding festivities, which may last two or three days, the new wife is conducted by her friends to the home of her husband about half-an-hour before sunset. If the new husband is a widower, she finds upon arrival that the doctor has been there before her, and has strewn appropriate medicines across the threshold of the entrance to the courtyard. The woman must jump over this medicine. At sunset the doctor enters the courtyard, takes some medicinal roots, chops them up with an axe, and puts them in a broken pot. Then he throws some live coals upon them, places the woman sitting upon the ground with the pot between her knees, and the man sitting facing her with his knees outside the woman's knees, and throws a kaross over the man, the woman and the pot of smoking incense, so that they may both be fumigated. Now it is necessary that the kaross should be made of ox-skin. Then follow ceremonies in which the intermingling of blood and the circle of fire are conspicuous. But they have nothing to do with the totemistic ritual of the ancient ox-totem that I have assumed.

But if we have found little in the marriage ceremonies to support our argument, the case is different when we consider the ritual of the grave. The old Becwana buried the dead in his own back-yard. The grave was 4 to 5 feet deep, and instead of laying the corpse in the bottom of the grave, they hollowed out a little cove for him on one side. In preparing the corpse for burial they place it on the ground in a sitting posture with its head on its knees, and its arms up at each side of its knees. My informant was not sure of the position of the hands. They tie it in this position with a thong of hide, or anything that is handy. Burial usually takes place immediately after death. But if *rigor mortis* has set in, the backbone is cut at the neck with an axe so that the head may be brought forward to rest on the knees. Sometimes the man is buried in his sandals and fur hat, and sometimes he is finally wrapped up in any old kaross that happens to be handy. But the correct thing is to tie up the corpse in an ox-skin. Then, before burial, an ox bone is held towards the dead man, and this is placed at his head in the grave. Sometimes the hoof of an ox is substituted for the bone. Then a *kao* or milking thong, a *mogala-secho* or nose-cord of an ox, and a milk bowl, are shown to the deceased in the same way. After this the peculiar whistle of the herd boy is imitated, and finally some dry cow-dung is thrown into the grave. It was usual for the chief wife of the deceased to kill an ox, and it was necessary that this ox should be all consumed during the night of the burial. For a woman the ritual was different. In her case other objects were substituted for the ox bone, the milking thong, the nose-cord and the milk bowl. A pot, a spoon, a plate, a *lohatlha* or pronged porridge stick, a winnowing fan, a pestle from the corn mortar, and a cracked pot (in which a woman usually carries live coals), are exhibited in front of the corpse, while, instead of placing cow-dung in the grave, Kaffir corn is scattered upon it. This substitution of things connected with cereal totems in the case of the woman serves to emphasise the fact that every item mentioned in the case of the man is directly connected with the ox totem; and it cannot be argued that this is a mere exhibition of the things most closely connected with the daily pursuits of the deceased; for during his life he was considerably interested in his flocks, as well as his herds, while war and the chase were his delight. And yet nothing representative of these other interests finds any place in the collection.

Before concluding my remarks upon this subject I may perhaps mention that among the Becwana there are certain well-recognised rights of the chieftainship. The chief alone has power to order the great tribal ceremonies, such as the ceremony of the doctoring of the seed, the New Year purification, and the initiation ceremonies. He has the power of taxation, and of administering justice. He alone can summon the civil assemblies and the armed assemblies, and has power of declaring war. He alone has the power that pertains to a "doctor," and all who act as medicine men in his country do so by his permission and exercise the power which he has delegated to them. Moreover, there are two things which are peculiarly his prerogative, and which, at first sight, appear to be disconnected with all that we associate with a chief. There is a tree called the *mokgalo.* It is a thorn tree, which bears long sharp-pointed thorns and hook thorns in close proximity to them. I am sorry that I cannot give its true name. The felling of this tree is peculiarly the chief's prerogative. As far as strangers are concerned the chief has power over the felling of all trees, and he may forbid his people to fell any particular trees in any particular locality; but they are free to fell what they need unless he distinctly forbids it. But they would not dare to fell the *mokgalo* in the old days without his distinct permission. And if one asks the reason, one is told that building the tribal cattle kraal of poles is a modern invention; and that of old the entrance only was made of poles, and the rest of the kraal of this *mokgalo* tree; that the kraal was renewed year by year, and that no one was at liberty to fell these trees until the tribal cattle kraal was built, and after that only by the chief's permission. Moreover the people say that there was something about the *mokgalo* which they do not understand, but that it was not like other trees.

The chief's other prerogative to which I have referred is that of castrating calves. No man was permitted to castrate calves till the chief had castrated his calves and had announced the fact. After that all who had calves were free to castrate them or not as they wished.

These two prerogatives strike one as being unworthy of the chief; but they are connected with cattle, and if the chief has inherited them from a time when the cattle were the totem of the tribe, and his ancestors priests of the totem-god, then there is nothing paltry about them.

Once when I was making inquiries of the Bakgalagadi as to the games that the children play, I stumbled on a man who was evidently out of sympathy with such trivial matters. He said there was much foolishness, and sometimes evil, in the games that the children played, and he proceeded to tell me a story. Once upon a time there were some children who used to play a reprehensible game. They used to play by the river-side, where they dug a pit in the sand, as people dig a grave, and making one of their number stand in this pit they would fill in the sand till it came to his neck. Then they would retire to a distance and sing "*Kgomo ea ga rra, Ntlo! Ntsèè!*" (Ox of my father, come and take me!); and when their buried comrade heard the song he would Coo-ee, and they would return and release him. One day when these bad children were playing this wicked game, and had buried one of their number in the sand, and had retired to a distance to sing that song, the river came down in sudden flood; and as they sang "Ox of my father, come and take me!" the great flood of waters swept their buried playmate away. The narrator said it was a serious thing for children to use such phrases in their games, and that in the excitement of play they were likely to do and say foolish things. It was clear that the phrase, "Ox of my father, come and take me!" was blasphemy in his ears.

But the subject is really too large for a paper, and I have been compelled to select and condense. We have seen that though every Becwana tribe has its present-day totem, yet these totems have had practically no influence upon their great rites and every-day customs; and that on the other hand cattle take the central place in all the ritual of the greater ceremonies. And I submit that this can only be explained by assuming that the ritual came from a far-distant past when the ox was the totem of the people, and that the present totems are mere modern accretions. And if this is so, it will not be hard to feel the significance of the Becwana saying, "The person who has no cattle is nothing at all of a person." It is not only that the cattle are the chief wealth of the people, though that counts for much, but it is that they were the clan-god of their fathers. And though the people have now lost sight of the fact, yet they have unconsciously inherited the feeling of mystery and security that their forefathers felt in the presence of their supernatural ally. They say the moonlight dance and song in praise of cattle is mere fun; and that oxen play a large part in their customs simply because they are the most valuable of their possessions. And they are right; just as the quarryman is right who flings aside the fossil and says it is a stone. But the fossil is a stone with a tale to tell for those who have ears to listen—the fossil ritual as well as the fossil shell. And whatever the Becwana may say of the moonlight dance and the black bull rites, most of them know that it is a very serious thing to swear by the cord in the nose of the red ox—"*Kea ikana ka mogala o mo nkoñ ea kgomo e khunou.*"

Yet that is not the greatest oath the Becwana know. The most sacred oath known to the Bamangwato is *Kea ikana ka thotse le segwana sa metse !*" (I swear by the gourd and the water dipper). The Bakwena, too, say this is the most sacred oath they know. Sometimes the formula is varied thus, "*Kea ikana ka Tintibane ea ñwana a lehatshe; ka thiba ka lehatshe; ka lelèmèla segwanyana se se kwa go Bese.*" I am sorry I cannot translate it, but it is something like this:—"I swear by Tintibane of the child of the earth; I bar the way with the earth; I grope towards the little water dipper that is in the possession of the eldest daughter of the chief." The chief's eldest daughter is always mentioned by name in this oath, and consequently the name varies in different tribes and different generations. Of Tintibane very little is known, but he seems to have been a god of the nether world. The water-dippers are made from gourds, and every woman uses one to fill her water pot at the fountain. The gourd or calabash is called *sego* in Secwana, and the form *segwana* is a diminutive, while *segwanyana* is a double diminutive. It is moreover a significant fact that there is a verb *go sego* which means to be blessed—a verb of such force that it is used in all Secwana translations of the New Testament as the most appropriate rendering of the Beatitudes. The Southern Becwana pronounce it *go tshego*; and they also call the calabash *tshego.*

This brings me to the last part of my paper, the survivals of plant and cereal totems found in the extant ritual of the Becwana.

Perhaps I had better state the position before calling the evidence. It is, briefly, this:—That just as we find survivals of the ox totem in the ritual that is peculiar to the men, so we find survivals of the gourd and the Kaffir corn totems in the ritual that is peculiar to the women.

The gourd family is well represented among the indigenous plants of Becwanaland, and, indeed, of Africa. Calabashes are grown everywhere; and I found them even more common in what is now German East Africa than they are in Becwanaland. The Becwana cultivate pumpkins and melons somewhat extensively; and they cultivate a plant called the *lerōtse,* which seems to stand between the pumpkin and the vegetable marrow. *Thōtse* is used particularly of the *lerōtse* vine; but it appears to be roughly a generic name. It includes *lerōtse* (already described), *legapu* (melon), *leputse* (pumpkin), *mokate* (wild lerotse), *mokapana* (wild melon) and *monyako* (a wild cucurbitaceous plant with fruit resembling a short, stumpy cucumber covered with spiky protuberances). The pumpkin is never used in the ritual; perhaps it is an imported plant. The *lerōtse* is preferred; failing that the melon, and failing that the *monyako,* while in an emergency the wild varieties may be used as poor substitutes.

But let me describe the ceremonies.

The ceremony is that to which I have referred already as the New Year purification ceremony. The ordering of this ceremony was one of the prerogatives of the chief. It was called by more than one name. Sometimes it is called *go loma ñwaga* (the biting of the year); sometimes *go loma thōtse* (the biting of the gourd); and sometimes, though less frequently, *go chwara thōtse* (the seizing of the gourd). The day was fixed at the chief's discretion; but the month Mekonwe was fixed by immemorial custom. Mekonwe is our January. The ceremony began in the great kraal of the tribe. There all the adult males were gathered together, and each took some of the leaves of the *lerōtse,* crushed them in his hand, and anointed his big toes and his navel with the juice. It is a singular fact that the children of the chief took precedence of their father in this ceremony; but after them the strictest order of precedence was followed, from the greatest in the tribe to the least, until all trace of precedence was lost. The *lerōtse* leaves were not pounded; they were simply crushed in the hand and rubbed over the parts referred to. For a very long time, it has been customary with many people to apply the juice to every joint in the body; but the better informed say that this is a vulgar departure from ancient custom. Some of the leaves might be pounded for the use of children who were too small to press out the juice for themselves. After the ceremony in the great kraal, each man will go home to his own kraal and will assemble the members of his family. Men, women, children and even the dogs will all be there. The ceremony is then repeated, except that the head of the family will smear every member of his family with the juice. When this is done, some leaves are pounded and mixed with milk in a large wooden dish, and the dogs are called to drink it. This latter custom is explained by the remark that in the old days dogs were highly esteemed, and treated more like children. If that is so, there has been a tremendous change of late years, for at present the life of a native dog is one of the cruelest neglect. After this the porridge plate of each member of the family is rubbed with the *lerōtse* leaves, care being taken that the plates are rubbed in the order of precedence. The plate of any absent member of the family would be treated as the rest. Upon the completion of this ceremony, it was proper to eat of the new crops, whatever they were, but nothing of the kind may be tasted before the ceremony.

On the night after this ceremony, it was a matter of ritual that every man should sleep with his chief wife. And if the wife had been guilty of sexual infidelity during the year that had passed, it was incumbent upon her to confess it before the culmination of the ceremony. It is said that every woman, unless she is quite lost to virtue, would warn her husband before the night came not to approach her till she had purged herself of her offence. Such a purification, if it were necessary, would take place the following morning. The man's father will take charge of the ceremony; but he will call in a doctor. The doctor will produce a bean plant, with its sprouts and its rootlets; will mix these with some other medicine of which he alone knows the composition, and will put them into a broken pot. He will then throw some live coals upon the mixture and, directing the woman to sit upon the ground with her knees drawn up under her chin, he will place the pot of smoking incense between her knees. The man will be placed in a similar position opposite the woman, except that his knees must be outside hers. Then the father throws a kaross over the pair, so that they may be properly fumigated. This kaross must be of ox skin. After the fumigation the husband and wife take a razor, and, in the presence of the father and the doctor, each will make two small perpendicular cuts just under the navel of the other. The cuts may be very slight, but they must draw blood. Into the blood from his own body, each of them will mix a little medicine, and rub the mixture into the cut which has been made in the abdomen of the other. Then the purification is complete, and the final act in the *go loma thōtse* ceremony may be proceeded with.

I was told by some people that on the night of the *go loma thōtse* ceremony, the husband would also confess to his wife if he had been guilty of marital infidelity during the past year. But though I interrogated many people on this point, I failed to satisfy myself that it was at all important. There were no supernatural penalties if he kept silence or prevaricated, and there was no purification ceremony if he confessed.

If an unmarried man should find it impossible to be home for the *go loma ṅwaga* ceremony, he will be troubled, for, though he will take the leaves of the *lerōtse*, or, if he is far away in the veld, the leaves of the *mokate*, and smear himself, yet it will probably be a year of calamity for him. But the married man who is absent from home is in a very sad plight. His chances of surviving the year are slight. He may try the virtue of a private anointing with the leaves, but it is not likely to help him much. When he returns home, he will not dare to enter his own premises, for he would pollute the place, and even if his shadow falls upon one of his children it will be fatal to the child. He will sit in the *kgotla* of his own little village,[1] not even daring to send a message to his wife, and if she does not come to him of her own accord, he will know that she has completed the ceremony in his absence, some other man having taken his vacant place. But if she comes to him bringing a calabash of water, he will take it and drink it gladly, and she will take his weapons and carry them into her house, and he may follow at his pleasure, for he knows then that she has ventured to postpone the ceremony for his coming, and they will celebrate the ceremony together. But he has made a large demand upon the loyalty of his wife. If she does not bring him water in a calabash, he knows well what it means, and he will go to some friend of his and spend the night there. Next morning he will call in the assistance of a doctor, so that he may again enter his own premises. The doctor goes to the house before him, and prepares the correct medicines, while the husband sits in the *kgotla* of his own village. When things are prepared, a man will bring him a little medicine from the doctor, and will rub his feet with it. He may then enter the courtyard. But he is still under a ban, and if one of his children touch him or even his shadow, either he or the child will die. When he enters the courtyard the ceremony of purification is immediately performed, just as I have described it. But, after the fumigation, the charred remains of the bean-plant and medicines are taken from the pot and pounded up, and husband, wife, and children are all smeared with it. But the matter is not ended yet; the worst consequences are probably averted, but there must be no commerce between husband and wife for the remainder of that year, that is, till the next *go loma thōtse* ceremony, and any breach of this rule will be punished with supernatural penalties—the husband, wife, or child will die.

Now it seems to me that there is something very peculiar about this ceremony. The phrases themselves, "*go loma thōtse,*" "*go chwara thōtse,*" and "*go loma ñwaga,*" are the usual phrases for the ceremony which I have described; but they always carry with them an idea of sexual intercourse. And it is quite clear that that is an integral part of the ceremony itself. If the wife has taken the gourd leaves and applied them in the usual way on the absence of her husband, that is a small matter, except that she appears to have been risking a good deal by not completing the ceremony. But if she has completed the ceremony with some other man, *she* is not under a ban, but her *husband.* There is no danger to anyone from her presence, but his very shadow would be fatal to her or to his children. And quite apart from any contact with his own family, the man himself is subject to the direst supernatural penalties. She has to share the purification ceremony with him it is true, but evidently not because she needs it, but because he needs her assistance.

In the case of the *thōtse*, unlike that of the cattle, the people themselves have a suspicion that it was once a tribal totem, though one never hears of such a thing unless one happens on an old man who has taken great interest in the customs of his tribe. And even in such an exceptional case one gets nothing more definite than the admission that in his youth he had heard someone say that they thought it was. But there is no tradition that it was forbidden food, except that all the produce of the gardens is forbidden food until this ceremony is complete.

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[1] Just as the town has its "great kraal" so has each village or division of the town its own little kraal, called by the same name *kgotla*.

Here it may be of interest to state that the words *thōtse, lerōtse,* and *go horōla* (to smear) appear to come from the same root, and one wonders whether the name *Bahurutshe* is not intimately connected with these words, a suspicion that is confirmed when one finds that all the tribes belonging to what I have ventured to call the Bahurutshe group delay the *go loma ñwaga* ceremony till the Bahurutshe have first completed it. *Go horōla,* which makes its perfect *horotse,* is sometimes used now of smearing in the ordinary sense; but it is *the* word for ceremonial smearing of the person, whether the smearing was with gourd-leaves, or *moshwañ,* or aromatic herbs, or anything else that the ritual demanded.

There is no doubt that the ceremony that I have described is very widespread. I know it exists among all the tribes of the Bahurutshe group, and I hear of a ceremony bearing the same title in many other parts of Becwanaland, and it seems to be much more extensive than that. The name of Lewanika's tribe on the Zambesi, the Barotse, at once suggests the gourd totem, and when Lewanika sent a younger brother of his as special messenger to Khama, I took the opportunity of inquiring what was the totem of their tribe. It is generally quite useless to talk with young men about any of the old customs, they know so little, even of the lore of their own people. In this case there was an additional difficulty in making myself understood, but I understood him to say that the tribe had many totems, but that the totem of his family was the *lerōtse,* and he said it would be very respectful to address Lewanika as Wanamutjoko. *Tjoko* is, I hear, the Sesuto name of a kind of wild water-melon.

Of other plant-totems and tree-totems I cannot speak at present, though if space permitted I should have something to say. But the most valuable evidence for plant-totems is to be found in the Initiation Ceremony for Girls. That ceremony finds its best explanation in the veneration of the *lerōtse* and the kaffir-corn. But in the course of the present year I will submit a paper on the Initiation Ceremonies of Boys and Girls, and that portion of the evidence must remain over for that paper.

THE PRIMITIVE AND THE ADVANCED IN TOTEMISM.

By Andrew Lang.

"The subject of totemism does not deserve to occupy the mind of an intelligent man for one moment." This opinion I cite from a sturdy English Midland newspaper. It summed up the ideas of a critic who had been set to review a book on totemism; and, as he would probably say, he "voices the indignation of a great practical people" against anthropologists. Meanwhile the few *crétins* who are still interested in the great totemic puzzle set by early man to his successors know that, in the question of the beginning of totemism, "we have the crisis with us." The curious are divided into two camps. Some hold, like Professor Baldwin Spencer, that the Australians are the most backward and primitive of peoples, while, among the Australians, the tribes of the centre and north are nearest the beginning. Other inquirers, like myself, feel equally certain that the tribes most backward and primitive, and nearest the beginning, dwell mainly, as far as is at present known, on the Murray and Darling Rivers, and their northern affluents. There are similar tribes in North America, for example the Thlinkets, but we shall confine ourselves to Australia.

The word "primitive," when used in this case, does not refer to material progress. All the tribes are equally, or almost equally, backward in mode of life; none tills the soil; none has domesticated animals; none has any knowledge of the metals; none has even so much as made a clay pipkin. But the tribes vary to an amazing degree in what, for want of a better word, may be called their religion, and in their social organisation.

The crucial question for students of the evolution of totemism is—which of the many stages of totemic society comes nearest to the beginning? Till we settle that problem, it is vain to try to find the origin of totemism. Is the most primitive shape of totemism the simplest and the most universally diffused, namely, the form in which the totem is hereditary, and the totem group is exogamous? Or is the most primitive form of totemism that which is associated with the most complex organisation, and occurs only in a single set of tribes; namely, the form in which the totem is non-hereditary, and the totemic group is non-exogamous? Professor Spencer and those who agree with him, hold that the most primitive totemism is that which occurs in a small set of tribes with the most complex organisation—the Arunta "nation" and the Kaitish of Central Australia—where the totem is not hereditary (though other things are hereditary in the male line), and the totem group is not exogamous. I think that the most primitive totemism is that which occurs in all the rest of the totemic world, and in the tribes of least complex organisation, where the totem is hereditary, and the totem group is exogamous.

Which set of tribes then, those of Central and Northern Australia, as Mr. Spencer believes, or those of South-East Australia on the Murray and Darling Rivers, is the most primitive in religion and in social organisation?

To take religion first, the south-eastern tribes believe in what Mr. Howitt calls an "All Father,"—"a magnified non-natural man,"—without beginning or end of days. His attributes vary. In many cases he sanctions tribal ethics and law: he receives the good, when they die, into his own place above the heavens: he is sometimes the father or maker of mankind, and maker of things. He has a son, who acts as his deputy in some relations with mankind. He established the native customary laws. In but very few cases is he addressed in prayer, and he receives no sacrifices.

This being, under various names, is known to many Queensland tribes, as Mulkari, and is known, or has been known, by tribes, now extinct, as far south as the coastal peoples of Victoria. In that large area, tribes of almost every grade and variety of social organisation equally profess the cult of this being, for whom dances are danced, and mystery plays, so to speak, are acted.

None of these tribes are ancestor worshippers. All are magic-workers, but such magician does his magic *individually*, "on his own": there are no groups of kin, no totemic groups, which, *as groups*, do *collective* magic. All, of course, are totemists, some of the tribes in the region inheriting the totem from the mother, some through the father. In the initiatory ceremonies, all these tribes use what Professor Spencer thinks the earliest rite, knocking out two front teeth. They do not practise what he thinks the more recently developed rites of circumcision and subincision.[1]

As to the future life, myths (as is usual everywhere), vary: now a soul goes to its own place, with the All Father, now in quite the opposite direction. Now, in the same tribe, the All Father changes the soul into an animal; or, again, it is a tree or rock haunting ghost; or, if the dead person died young, before initiation, the soul may be reincarnated. There is, among these tribes, no strict orthodoxy about the future life. In none of these tribes (to the best of my information) do we hear of the perpetual reincarnation of the soul in new-born children.

Such is the religious condition of tribes, from as far north as the south of Queensland to the coast of Victoria.[2]

The religious, or irreligious, condition of the central tribes from the Urabunna or Lake Eyre to the sea in the north is most strangely different from that of the tribes south and east of them. With the exception of "the Great Ulthaana" (spirit) "of the Heavens, *alkirra*," attested by Professor Spencer's fellow traveller and author, Mr. Gillen, among the Arunta,[1] and of Atnatu among the Kaitish tribe, next neighbours of the Arunta of the centre,[2] we hear nothing of a sky-dwelling All Father among the central and northern tribes. Among the Arunta there is a fable, told to women and children, about "the great Spirit," Twanyirika, "who lived in wild and inaccessible regions and only comes out when a boy is initiated."

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[1] *Northern Tribes of Central Australia*, p. 329. *Native Tribes of Central Australia*, p. 453.

[2] Howitt, *Native Tribes of South-East Australia* (1904). Mrs. Langloh Parker (Mrs. Percival Stow), *The Euahlayi Tribe* (1906)

This being answers to the Daramulun of some south-eastern tribes, among whom Baiame is the All Father. Among the Arunta he is no All Father, but a bogey.

The Ulthaana seems to do nothing in particular, except that he receives souls into his home, and then throws them into the sea. Atnatu, on the other hand, made the beginning of things, expelled disobedient sons from his heaven to earth; let down to them "everything which the black fellow has, spears, boomerangs, clubs, tomahawks, everything in fact, and thus made the Alcheringa" (beginning) "in the Kaitish tribe." He instituted the initiatory ceremonies: the sacred instruments (bull roarers, *churinga*) are imitations of his own; he is unknown to the women (like the All Father of the south-eastern tribes) but his precepts are entirely ceremonial, not, as among the south-eastern tribes, also moral.[4]

It is plain that Atnatu is either a debased or a nascent and half-developed form of the south-eastern All Father, as also probably is Mr. Gillen's "great Ulthaana of the heavens," among the Arunta. If Mr. Gillen has found that he was misinformed about the Arunta Ulthaana, it would, apparently, have been well to mention the Ulthaana, and the sources of error about him, in the works on the central and north central tribes. In my *Secret of the Totem* (pp. 80–83) I alluded to the Ulthaana belief, and to the necessary absence of the reincarnation belief among the Arunta as described by Mr. Gillen in the *Horn Expedition*. I also cited the evidence, to a similar effect, of Kempe, in 1883, and hinted at other evidence for "a sky-dwelling emu-footed being" among the south-western Arunta. In *Folklore*, vol. xvi, No. 4 (pp. 428–434), Mr. N. W. Thomas gives the evidence (1905) of Mr. Strehlow, a missionary at Hermannsburg. Here we find "Altjira, god of the Arunta," an emu-footed being, "surrounded by handsome youths and immortal virgins," in the sky. We may drop the term "god" and regard the "handsome youths and immortal virgins" as parallel to "the sons of Atnatu," who dwelt with him above the sky. As to the word "Altjira," and its connection with *Alcheringa*, "dream-time," real or supposed, the question must be left to philologists But Mr. Strehlow's Arunta do not believe in the Arunta reincarnation philosophy, any more than do the Arunta of Mr. Gillen, in *The Horn Expedition.* Mr. Thomas says that "of the Arunta language Mr. Strehlow is a master;" so too, I presume, are Messrs. Spencer and Gillen, but probably there exist great dialectical and mythological differences in various parts of Aruntadom.

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[1] "Notes on some Manners and Customs of the Aborigines of the Macdonnell Ranges, belonging to the Arunta Tribe," Gillen, *Horn Expedition*, vol. iv, p. 183.

[2] Spencer and Gillen, *Northern Tribes of Central Australia*, pp. 498–500.

[3] *Northern Tribes of Central Australia*, p. 497.

[4] Spencer and Gillen, *Northern Tribes of Central Australia*, pp. 497–500.

As far as the evidence goes, especially when we remember the traces of a limited belief in reincarnation among the Euahlayi of North-West New South Wales who hold the All Father belief, and the Atnatu belief of the Kaitish, next neighbours of the Arunta, the process of development seems to be from the All Father belief to the All Fatherless evolutionary philosophy of reincarnation among the Arunta, the Urabunna, and the North Central tribes. In the Kaitish we find both beliefs co-existent and modifying each other. Or shall we say that the All Father belief of the tribes of simplest social organisation is working its way north among the tribes of most complex organisation, has reached the Kaitish and the Arunta of Mr. Gillen, but has not yet invaded the evolutionary All Fatherless belief of Mr. Spencer's Arunta? The question has to be faced: meanwhile, I regard the evolutionary All Fatherless belief as the later, and as a proof of advanced speculation among the tribes who hold it.

The central and northern tribes hold that all souls are descended from, or were produced by, mythic creatures, half human, half animal, in the beginning. These creatures instituted ceremonies; when they died, or went finally under the earth, the totemic souls which had been theirs, or which they had scattered abroad, were reborn as men and women of the various totems, and, after death, they continue to be reincarnated still retaining their original totems. When a person dies, his or her soul goes to its original starting place and there hangs about till it enters a woman, and is incarnated again and so on *in infinitum.*

All these central and north central tribes hold this "animistic" belief, but are not ancestor worshippers, though the ancestral spirits are apparently pleased by their totemic magic. All these tribes practise the, probably, later initiatory rites of circumcision and subincision; the south-eastern early rite of knocking out teeth holds among them a casual and subordinate place.

Though there are, among these tribes, plenty of individual magic workers, for their own ends, a peculiarity of the central and northern tribes is that their totem kins, *as such,* work *collective* magic for the behoof of their totem, (mainly animals and vegetables) as part of the tribal food supply.[1]

This working of co-operative magic, highly organised, by the totem groups, for the behoof of their totems, as part of the tribal food supply, is unknown, Mr. Howitt says, to the south-eastern tribes, a point to which we return. It is, however, familiar to the more prosperous and more advanced tribes of the Torres Islands, and to the Siouan, Omaha and Dacotah tribes of North America. Among the central and northern tribes this collective highly organised working of magic for the totem is accompanied by a strong sense of *proprietorship* in them. Each totem kin or groups *owns* its totem and even permits the other groups to kill and eat its totem, or otherwise make use of it. Neither the co-operative magic, nor the property in the totem is known to the south-eastern tribes. (Property in what are called the "sub-totems" of the Euahlayi and some other south-eastern tribes is another question.) In short, among the central and north-eastern tribes, as among the agricultural and advanced tribes of North America and the Torres Islands, totemic ideas have extended themselves in the practical direction of ownership of the totems, and power of magically breeding them as food supply for the tribe.[1]

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[1] Out of 181 animal and vegetable totems, only ten are not eaten by the natives, and these ten are, mainly, various sorts of flies (*Northern Tribes of Central Australia,* pp. 768–773).

In other respects, for example as regards the future of the soul, the central tribes have attained a really surprising orthodoxy of creed (no variant myths in each tribe); while the south-eastern myths are heterodox and various. An exception is the Kaitish tribe, with the All Father and also the reincarnation beliefs. Among the rest of the central and northern tribes, all human beings descend, by perpetual reincarnation, from the primal totemic beings, or the totemic spirits which they diffused. But among the Kaitish, many human beings descend from the sons of Atnatu, whom he expelled from heaven. The other theory has not superseded this belief, or this belief has not dominated the other theory.

In the matter of what I may call "mystery plays" (dramatic rites representing early legendary adventures of the mythical ancestors), those of the central tribes are much more elaborately staged, costumed and managed, and much more frequent and prolonged than the brief rites which, among the south-eastern tribes, show some burlesque adventure of the All Father, when he dwelt on earth. The legendary history of the "Alcheringa" ancestors of the central tribes is very copious and minute, and is preserved by means of their mystery plays. Their origin is as obvious as in the case of the North American or Greek variants of the Eleusinia. There is a traditional rite; its origin is unknown to the blacks. They say, "such and such an Alcheringa ancestor did it; one of us is that ancestor reincarnated." So they do the rite over again, and tell the legend of how the ancestor did it. The practice, not unknown to the south-eastern tribes (who substitute the All Father for the Alcheringa ancestors) is, among the central tribes, more complex, prolonged, frequent, and elaborately staged and costumed.

Such are the differences between the "religious" and magical practices of the central tribes (the most primitive, says Professor Baldwin Spencer) and the south-eastern tribes, the most primitive, in my own opinion. But Mr. Spencer thinks that the initiatory rites, at all events, of the central tribes, are probably the less primitive. Here I agree with him.

On the other hand he thinks the dramatic and magical totemic rites of the centre more primitive by far than those of the south-east. I would reply that the magical totemic rites also occur among peoples far above the Australian level of culture; and that, being *collective*, they imply more complete organisation than the south-eastern people possess. To organise science, in Europe, meant a great advance: to organise magic is a parallel step, among savages. For these reasons, I think the central rites less primitive than those of the south-east. The orthodoxy, too, of the central tribes, seems more advanced than the south-eastern variety of myths.

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[1] Dorsey, "Omaha Sociology: Siouan Cults," *Report of Bureau of Ethnology*, 1881–1882, pp. 238–239; 1889–1890, p. 532. Frazer, *Totemism*, p. 24 (1887). *J.A.I.*, N.S., i, pp. 5–17.

As to religion, the student must ask himself, "Is the All Father belief more or less likely to be primitive than the evolutionary belief, with the doctrine of perpetual reincarnation?" This is a matter of private opinion.

But we must remember that when Mr. Howitt asserts[1] that the All Father belief is concomitant with social "advance from descent in the female line to that in the male line," he has strangely forgotten his own array of facts. He gives us five south-eastern tribes in which descent in the male line accompanies belief in the All Father; and seven tribes in which the All Father belief is held by tribes with descent in the female line. If the belief extends, as Mr. Howitt thinks, "over all New South Wales, up to the eastern boundaries of the tribes of the Darling River,"[2] then it is held by the Wonghibon tribes, and by the whole Barkinji "nation," who all reckon descent in the female line.[3]

Mr. Howitt's general statement is thus opposed to his own collection of facts. It has been quoted by more than one writer, and has been accepted apparently without reference to the facts of the case. Thus arises the deeply rooted delusion that the All Father belief is only found in concomitance with the social advance implied in the change from reckoning in the female line to reckoning in the male line. On the other hand the All Father is never reported (except in the cases of Atnatu and of the great Ulthaana of the heavens) among the central and northern tribes, all of which reckon descent in the male line. As the All Father belief is held by many tribes which have not made the social advance of reckoning descent in the male line, and which practise the more primitive initiatory rites, while it is not held by the vast congeries of tribes which have made the social advance to reckoning in the male line, and which practise the later and more complicated initiatory rites, it is perfectly certain that social and ceremonial advance is not the cause of the All Father belief. The opinion that it is the cause is merely the result of a hasty generalisation, made in defiance of the known facts.

It is open, however, to anybody to hold that the All Father belief is posterior to the perpetual reincarnation belief. Only nobody can deny—if the reckoning of descent in the female line is a proof of primitiveness—that the All Father belief is much more frequently held by the more primitive tribes, those with female reckoning of lineage, than by the more advanced tribes. Only one set of tribes with female descent, the Urabunna, is said to have no All Father belief, and to have the reincarnation belief, and that tribe intermarries with the All Fatherless Arunta.

The process of reasoning, among those who hold at once that the central tribes—all with male descent and practically all All Fatherless—are *primitive*, is this :—"Specialised or highly modified" tribes, as to organisation, are to be sought "along the coast line."[1] The central tribes are not found along the coast line. Therefore the central tribes are not specialised or highly modified, but primitive. It has also been argued that religious advance is due to the better conditions of life produced by coastal influences, rain and fertility. The All Father belief is a religious advance on the religionless condition of the central tribes. Therefore the All Father belief is due to coastal influences and other influences which improve the conditions of life.

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[1] *Native Tribes of South-East Australia*, p. 500.
[2] Howitt, p. 500.
[3] Howitt, pp. 488–500.

The reply is that many tribes holding the All Father belief, and retaining female reckoning of lineage are not coastal but dwell far inland. Again their conditions of life have not begotten in them any social advance.

Facts cry out against such generalisations ! If coastal influences beget social advance and religious advance, why, as the All Father belief is a step in advance, have the coastal tribes of north and north-east Australia no All Father? Again, if they have none, why is an All Father common among the non-coastal tribes in Queensland and New South Wales? The supposed climatic cause does not produce the effect; the effect occurs without the supposed climatic cause.

Again, if climatic causes associated with the sea produce the social progress from reckoning in the female to reckoning in the male line, why do the coast tribes of East Queensland reckon in the female line, and why do the tribes most remote from ocean reckon in the male line? Nobody disputes the facts, which are in contradiction with the generalisations. We must therefore cease to generalise on these points. Nobody knows why, in some inland regions, female descent and the All Father belief exist; while in other regions, whether central or coastal, male descent exists, and the All Father belief is all but invisible. We must beware of making generalisations in defiance of facts, and of proving other facts by way of deduction from our generalisations.

The indisputable facts are that, in some coastal regions, north and north-east, we find kinship and descent traced in the male line, and the most complex forms of social organisation, and no report of an All Father. In other coastal regions (Queensland) we find descent traced in the female line, and an intermediate form of social organisation, with four, not eight classes, and with moieties retaining their names.[2] Of an All Father nothing is said. In yet other coastal regions, those of Southern Victoria, we find the simplest form of organisation, save that descent is traced in the male line, with a tendency to drop the class system altogether. There is an All Father.[3]

Looking at inland tribes, those of South Queensland and New South Wales have the All Father belief, and either the simplest or the second most simple organisation, with female descent in both cases. The tribes of the centre and north have no All Father, or only Atnatu and the Ulthaana, but, remote from coastal influences as they are, they have attained to descent in the male line, and to the most complicated of all organisations. These facts defy and baffle generalisations about the effect of climate on religious and social advance; and we cannot argue that the central tribes must be most backward because they have least rainfall.

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[1] Spencer, *Report of Australasian Assoc. for the Advancement of Science*, 1905, p. 382.

[2] Howitt, *Native Tribes of South-East Australia*, p. 111.

[3] Howitt, pp. 133–137.

We therefore ask, are the central or the south-eastern tribes the more primitive in social organisation? Now on this point we have scientific certainty; the south-eastern tribes, with reckoning of female descent and with the simplest of all organisations, are by at least four degrees, or stages, more primitive in social type than the tribes from the central Arunta, northwards to the sea. This is stated in so many words by Mr. Howitt. He traces "a socially progressive series" from the condition of the south-east tribes with *female* descent and with only a twofold division of the tribe, forward and upward to the condition of the central tribes, with *male* kin, and with a tenfold division of the tribe. Mr. Spencer also tells us that "any movement which there has been in social matters has been clearly in the direction of increasing their complexity."[1] In his opinion the original tribe consisted of so many groups, each doing magic for a given plant, animal, or other object. There was no other organisation of any kind in the original tribe; then the magical groups were divided by the legislator into two "series," or moieties, the same magical group never occurring in both moieties.[2]

After the division was made, the members of each of the two moieties now created were forbidden to marry within their own half, and compelled to marry with the other half.[3]

This was the primitive organisation, Mr. Spencer says, and it advanced by increasing degrees of complexity till the organisation of the central tribes was reached. In place of two tribal divisions, or "phratries," and *female* descent (the confessedly primitive organisation of many south-eastern tribes), the tribes, from the Arunta to the sea, have two divisions, each cut up into four divisions, making ten in all, and have *male* descent. Moreover, in some of the central tribes, such as the Arunta, the two primal divisions have lost their names, and the names Mr. Spencer speaks of as "a primitive feature." Manifestly, therefore, the central tribes, having advanced furthest of all from Mr. Spencer's primitive model, are the least primitive of all the tribes in question, while the south-eastern tribes, which have retained Mr. Spencer's primitive model (including the primitive names of the two divisions), are the most primitive. That is a matter of scientific certainty, if we accept, as I do, and as, indeed, is inevitably necessary, the opinion of Mr. Howitt and Mr. Spencer that progress has been from the simplest, to the less simple, to the more complicated, and finally, to the most complicated organisation, that of the central tribes.

So far, all has been harmony, but at this point Mr. Spencer startles us by saying that the tribes of male descent and of the most complicated organisation are "undoubtedly the most primitive and backward tribes."[1]

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[1] *Native Tribes of Central Australia*, p. 54.

[2] *Report A.A.A.S.*, p. 421–423.

[3] *Report A.A.A.S.*, p. 421–423.

I now examine Mr. Spencer's set of groups in his list from A to I. As a sample of Group A (female descent, no classes), he chooses the Urabunna, a central tribe who intermarry with the Arunta. This tribe, being in close touch with the Arunta, and using their *churinga*, is not a good sample of tribes with moieties, female kin and no classes, for it possesses the central and northern belief in endless reincarnation of souls (not found among south-eastern classless tribes with female reckoning of lineage), and I suspect that it really has classes. The evidence on this point is incomplete and indistinct. Meanwhile, I regard their stereotyped and orthodox philosophy of reincarnation as much less primitive than the mixed myths about the future life which prevail south-east of the centre. That savage orthodoxy implies advance, few will doubt; and Arunta or Urabunna orthodoxy is really surprisingly advanced. Group B are Mr. Howitt's Mukwara Kilpara south-east tribes, with moieties of these names, female descent, and no classes.

About a set of extinct tribes (Group C) Mr. Spencer remarks that they present "a curious feature, to which we shall refer again later, and one in which they differ from almost all other tribes," namely, "that what are apparently moiety names are those of animals." I shall take this point at once, because, as far as I am aware, all moiety names which have been translated, with one exception (the Euahlayi names), are names of animals.

Mr. Spencer returns to the topic when considering group H.[2] The tribes, now extinct in Group H, had the moiety names *Bunjil* (Eagle Hawk), and *Wang* (Crow). The tribes in Group C had moiety names, *Merung* (Eagle Hawk), and *Yukembruk* (Crow), or *Malian* (Eagle Hawk), and *Umbe* (Crow). Mr. Spencer says that, in Group H, "the very fact" (that the moieties bear animal names) "is in itself sufficient to excite suspicion" that these moiety names are not really moiety names.[3] First,[4] moiety names are "so primitive a feature," which, of course, makes it all the more extraordinary that "the most primitive and backward" of all tribes have lost (in the case of the Arunta and other cases) that "so primitive feature," their moiety names. The tribes in Group H ought not, it seems, to have a primitive feature which even the primitive Arunta have lost. They ought not to have it, because they are, or rather were, neighbours of the Wotjobaluk tribe. But that tribe was so primitive as to have moiety names, which, moreover, though Mr. Spencer does not mention it, are animal names. The Wotjobaluk names are *Gamutch*, *Krokitch*, which exist in other dialectical forms as *Kroki*, *Kumite*, *Krokitch*, *Kurokeetch*, *Kaputch*, *Krokage*, *Kubitch*. All these names denote two different species of cockatoos.[5] *Krokage* is White Cockatoo, red crested; *Kubitch* is Black Cockatoo; *Kurokeetch* is Long-billed Cockatoo; *Kaputch* is Banksia Cockatoo.[6] Kurokeetch,

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[1] *Report A.A.A.S.*, p. 378. This statement he frequently reiterates.

[2] *Ib.*, pp. 302–392.

[3] *Ib.*, p. 391.

[4] *Ib.*, p. 390.

[5] Howitt, *ut supra*, pp. 121, 125.

[6] Evidence of Mr. Dawson and Mr. A. L. P. Cameron, *op.* Howitt, p. 125. Note.

Krokage, Kroki, Krokitch, Kaputch, Kubitch, Gamutch, are Cockatoos, says Mr. Howitt. All this set of animal names are names of moieties. One does not see why it should be reckoned "suspicious" that Group H, "hemmed in by the Wotjoballuk nation on the west," had animal names for their moieties, as their neighbours the Wotjoballuk have also animal names for *their* moieties. But Mr. Spencer says that "the Wotjoballuk nation has become much modified in totemic matters." In fact, the Wotjoballuk have sub-totems, but they retain that very primitive feature, moieties of animal names. Consequently, it is not suspicious that their neighbours, Group H, also had animal names of their moieties meaning Eagle Hawk and Crow. Their "geographical position" has nothing to do with the matter; they were in mid-Victoria, with good conditions of life; but these conditions will not necessarily make a tribe drop the animal names of its moieties.

Again, Group H have nearest them the isolated Kurnai on the east who "have lost all trace of class and totems."[1] But we now know that the Kurnai have at least ten known totems. Moreover, development not being uniform, there is no reason why Group H should lose its moieties because Group I has lost them. Next, it is reckoned very odd that the moiety names lasted in Group H, while only one totem name could be found. But the phenomenon is common in Melanesia, moiety names with no totems, or only very decadent totemic survivals. Mr. Danks gives two animal-named moieties in New Britain.

As to animal names for moieties, has Mr. Spencer discovered that *Mukwara* and *Kilpara*, perhaps the most widely distributed of moiety names, do not mean Eagle Hawk and Crow?[2] The moiety names *Walar* and *Murla* denote two species of Bee.[3] Of the two Wiraidjuri moiety names, one, *Budthurung*, means Black Duck, while the other *Mukula*, is untranslated; it must mean some other animal.[4]

Mr. Spencer later returns to the question of moiety names. He writes, "I may say, in passing, that the evidence that the names of the two moieties were originally those of totems is extremely meagre. Tribes in which this is so, or is reputed to be so, occupy only a minute fraction of Australia, and in one of these, the Kulin (Group H) the chances are that the terms are by no means the equivalents of primitive moieties."[5]

But I have proved that the Eagle Hawk and Crow moiety names prevail over, not a minute fraction, but "a monstrous cantle" of Australia, while a Cockatoo moiety name, Munichmat,[6] occurs in Western Australia, as well as two in South-east Australia, and, with the Bee names and the Black Duck name, occupy territories of considerable expanse. The Queensland moiety names, *Yungeru* and *Witteru*, have also been translated as animal names, but not consistently, while Mr. Howitt gives animal names as translations of the class titles of the Kuinmurbura tribe having the *Yungeru* and *Witteru* moiety names.

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[1] Howitt, *N.T.S.E.A.*, p. 135.

[2] For the evidence, dated 1852–1878, see my *Secret of the Totem*, pp. 159, 162.

[3] Howitt, *ut supra*, p. 118.

[4] Howitt, p. 107.

[5] *Report A.A.A.S.*, p. 421.

[6] Information from Mrs. Bates.

The Kuinmurbura class names are :—

Kurpal ...	... The Barrimundi.
Kuialla ...	... Hawk.
Kurilbura ...	... Good water.
Munal ...	... Iguana.[1]

For the Narrangga (York Peninsula) class names Mr. Howitt gives Emu, Red Kangaroo, Eagle Hawk, Shark.[2] Our evidence is that, except in the case of the Euahlayi, translated names of moieties and classes are animal names. The usual process of development seems to be ;

1. Animal named moieties, the same names retained for the animals when they appear as totems.
2. Animal named moieties : as totems the two animals have other names : the moiety names for them are older, or borrowed.
3. Moieties with names. Meaning of names forgotten.
4. The names of the moieties are lost altogether.

The Arunta have wholly lost their moiety names ; strange, in a tribe called " most primitive " !

As development is not uniform, there occur exceptions to what, on the whole, seems the natural and normal evolution. In Australia, where classes exist, they do the regulative work previously assigned to the moieties, and thus the tendency is for the meaning of the moiety names to be forgotten, even among the Kamilaroi. Their moiety names are *Kupathin* and *Dilbi*. Later, with sub-classes, eight in all, the moiety names are not infrequently lost entirely.

In America there are still a few examples of moieties with names of known meanings, names of animals. There are no moiety names of unknown meaning in America, and no classes, while the regulation work, as regards marriage, is almost entirely thrown on the totems. In Melanesia totems do not regulate marriage: the work is done by moieties, with or without names. Thus the evolution may and does take various paths, but the line already indicated is perhaps the most usual in Australia.

Thus, wherever we find notes of advance, namely, the loss of moiety names, the extreme complexity of (the Arunta) social organisation, their collective enterprise, and the use of the confessedly more advanced initiatory ceremonies, the central tribes exhibit these notes of advance. They also, except the Urabunna, have made the important step of reckoning descent in the male line.

In case anyone should say that, very probably, the central tribes were so fortunate as never to have reckoned descent in the female line at all, but began by reckoning in the male line, and consequently that they have not advanced, in this respect at least, it is only necessary to remark that their institutions prove the fact of their advance.

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[1] Howitt, p. 111. Authority, Mr. W. H. Flowers.

[2] Howitt, p. 130. I may add that Murri, one of the four Kamilaroi class names = Red Kangaroo.

In many of these tribes, all members of the tribe, though they inherit the totem from the father, equally respect the totem of the *mother*, which in no case do they kill.[1] This usage, of course, means that, at one time, they inherited the totem in the female line, and, when they changed to the male line, they still kept up the old respect for their mothers' totems. The same tribes, all over the north centre, though they inherit the totems of their fathers, inherit property in the female line. A man's daughters' husbands, and his maternal nephews are heirs to his chattels. Everything goes to the half of the tribe to which the dead man's mother belonged, and he did not belong.[2] Here is another certain proof that, from the tribes next the Kaitish to the northern sea, the peoples have passed from reckoning kinship in the female to reckoning it in the male line.

The tabu in the mother's totem (though the totem name is inherited from the father), reaches to the north-east coast tribes on the sea coast.[3] Thus none of these tribes is primitive; the survivals prove that all, except the Kaitish and Arunta, have advanced from the primal mode of reckoning descent, to the secondary, and, so to speak, civilised method. It seems to follow that male descent is of longer standing, and of more complete dominance, among the Arunta and Kaitish tribes than among the rest.

As the whole set of facts, and Mr. Spencer's own test of degrees of progress, prove that the central tribes are the least primitive, why does he, none the less, say that they are "the most primitive and backward"? If I may hazard a conjecture, he was led to his conclusion thus: finding the magical rites of the totem among all central tribes, from the Dieri and Urabunna (with female descent) nearly to the sea, Mr. Spencer conceived that the *magical* function of the totem kin or group was the earliest of all, and inferred that the tribes which exhibit this feature must be the most primitive. When he also discovered that, among the Arunta of the very centre, the totem group had no other function but this of magic, and in no way (as elsewhere) affected marriage rules, he became fixed in his theory. The original totem groups were merely magical societies, he thought, as among the Arunta. Totems only began to affect marriage law when they were placed by the Legislator in his exogamous two divisions of the tribe. As the same totem (outside the Arunta range) never occurs in both exogamous moieties, everywhere else a person who is obliged to marry out of his or her own moiety, *must*, automatically, marry out of his or her own totem, which, as all over the world, is exogamous. But, among the Arunta, the same totem may occur in *both* moieties, and a person may therefore marry a member of his or her own totem, who is not in his or her own, but in the other moiety.

Mr. Spencer does not value the fact that the tribes of the simplest organisation do no totemic magic. He says that they have not been observed closely enough, or have dropped the habit, though they keep up individual magic.

That totemic magic is a feature of decadent totemism not of primitive, in

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[1] *N.T.C.A.*, pp. 166, 167.

[2] *N.T.C.A.*, pp. 510, 617, 618.

[3] *N.T.C.A.*, p. 176.

North America and the Torres Islands, is a circumstance to which Mr. Spencer makes no reference. In any case, if the south-east tribes really practised totemic magic, unobserved, in that point they were merely on a level of primitiveness with the central tribes. The central tribes are not—if the south-eastern tribes practise, or have practised, collective totem magic—more primitive, even on this point, while, in all points of organisation, they are far more advanced. Thus, in no case, does their totemic magic prove them backward and primitive.

But Mr. Spencer observes that in the Arunta nation, the totem groups are not only magical, they are also non-exogamous; they do not affect marriage laws. Mr. Spencer, therefore, reached the conclusion that to be magical—not to affect marriage laws—was the primal function of the totem.

The Arunta, if so, have a primal idea and usage, found nowhere else; but how, even if they have, Mr. Spencer can say that a tribe of the most complex organisation known, with male reckoning of descent, is primitive, we fail to understand.

By his own showing, the tribe retained its primitiveness in the totems in a very strange way. Originally there were no marriage prohibitions in his opinion, but there were totemic magical societies. When a tribe was split by the Legislator into two moieties, with half the totems in one and half in the other moiety, and when marriage was ruled to take place only between members of opposite moieties, nobody, as we saw, could possibly marry into his own totem. The Arunta can, and do, says Mr. Spencer, because all White Bat folk, say, were drafted into one moiety, all Wild Cat folk into the other. But at this moment a strong bullying Wild Cat local group might seize a small weak White Bat group in their neighbourhood, and, "so to speak, drag the White Bat into its own moiety"—away from the mass of White Bats who had marched, as bidden, into the other moiety.[1] Thus the Arunta obeyed the Legislator by marrying out of their moiety, but disobeyed him by dragging into their moieties members of totems which the Legislator, in his wisdom, had drafted into the opposite moiety. Consequently, White Bat in moiety A may still marry White Bat in moiety B, and so the primitive absence of totemic exogamy survives among the Arunta.

Mr. Spencer's new theory is a rather desperate attempt to save Arunta primitiveness by suggesting that they saved it themselves. They kept their primitiveness by refusing to obey the first Legislator. But he had previously offered an explanation of the Arunta anomaly, which is not a theory, but a fact, and is recognised as such by the Arunta themselves. Their anomaly is the inevitable result of their philosophy, which is held by other tribes, who do not allow their philosophy to overrule their law. But to admit that the Arunta anomaly is the result of their philosophy, as Mr. Spencer has distinctly stated that it is,[2] is practically to admit that the anomaly is not primitive, for nobody can suppose that the philosophy is primitive. It is a set of myths made to explain existing totemic facts; hence Mr. Spencer's need of a new theory. It cannot be accepted (1), because if this kind of "dragging," contrary to law, could be done in the Arunta region, it could be done all over the totemic world just as easily. But there is not elsewhere a single trace of the outrage. (2) The hypothesis postulates local totemic groups. These, with hereditary totems, can only exist after counting kinship is removed from the female to the male line. *Local* totem groups are not primitive. (3) Mr. Spencer, as we have remarked, had given the true and obvious explanation of the phenomena in his *Central Tribes,* showing that, for reasons correctly stated, totems have filtered, and still filter, very gradually out of the right into the wrong moiety, under the influence of Arunta philosophy, *plus* an unique and unexampled Arunta superstition.[1] To his first explanation we shall return.

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[1] *Report A.A.A.S.*, p. 422.

[2] *Central Tribes*, p. 123.

To understand what happened we must remember that the lawless dragging of small totem groups by big groups of another totem into the wrong moiety, was only done by the Arunta nation. Alone in the world of savagery they did this thing. The rest of mankind obeyed the law, the totem kins were divided between the moieties, the same totem never in both moieties, and the woman always bore children of her own totem, which is never in her husband's moiety. When a tribe change to male reckoning the woman's child was always of her husband's totem.

But when the central tribes came to believe (which they cannot have done in a moment) that every human child is a primal spirit, is one of many totemic spirits scattered about the country by primal legendary creatures, that each spirit has his primal home, and that they all haunt these homes, and enter into any passing women, then a difficulty arose. Here is a lady, by totem *Snipe,* her husband is, by totem *Duck*; her tribe reckon descent in the female line. She conceives a child in the region notoriously haunted by *Grub* totemic spirits. Is that child to be a Grub? "By no manner of means," says the tribe, "that plan would reduce society to dust. Grub is not a totem in the mother's moiety; besides, it has, from the first, been our loveable custom that a child should hereditarily bear its mother's totem name. The fact must be that a woman, wherever she goes, is haunted by spirits of her own totem; one of them, a Snipe spirit, has entered her; or if not, the child, in any case, *has just got to be born a Snipe.*" The tribe, therefore, adapted its myth to its old law; decided that the spirits knew the law in the case, and that they refused to enter a woman of the wrong totem. If a spirit did make a mistake, says the myth, the woman died.[2]

If the tribe reckoned descent in the male line, then the woman, says the myth, is followed by a spirit of her husband's totem. To every lawabiding local spirit of any other totem than her husband's she was "the wrong woman"; no such spirit would enter into and be born from her.[3]

Manifestly the myths were devised to save the situation created by the belief in local totemic spirits desiring reincarnation. The myths explain why a woman, despite the abundance of totem spirits of the wrong sort, never entertains and gives birth to any but a spirit of the right sort. Under female reckoning of descent it must be a spirit of her own totem; under male reckoning, it must be a spirit of her husband's totem, that the old law of totemic heredity may not be broken.

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[1] *Central Tribes,* p. 123.

[2] *N.T.C.A.,* pp. 148, 174–175.

[3] *N.T.C.A.,* pp. 169, 170.

Thus, despite the rise of the reincarnation philosophy, totems continue to be hereditary and exogamous among the central tribes, as in the entire totemic world, except in the Arunta nation alone.

It is perfectly clear that the reincarnation philosophy of the central tribes is later in evolution than the hereditary and exogamous character of their totems. If the philosophy had come first, women would always bear children of the prevalent local totem; would entertain spirit children of that totem, whatever their own totems or their husband's totems might be. But this does not occur, and the myths are told to explain *why* it does not occur and to excuse its non-occurrence.

Among the Arunta nation, alone of mankind, it does occur, that is, women do entertain and bear children neither of their own nor of their husband's totem, but of the local totem of the place of conception. The Arunta apparently took the philosophy of reincarnation more seriously than the other tribes; or took law less seriously, and, unlike the other tribes, adapted their law to their creed, and did not maintain the old hereditary character of the totem. The Arunta clinched their philosophy by the fable peculiar to themselves that local spirits haunt their old stone amulets (almost peculiar to the Arunta), and drop them on the spot where they re-enter incarnate life. There the amulets are found, and the new-born child obtains the Churinga which, as a spirit, he dropped on the ground at the moment of his re-entering the conditions of flesh and blood. Where there are no stone amulets (*Churinga nanja*), there we find no reincarnation of local spirits in "the wrong mothers," and totems are hereditary and exogamous, as all over the totemic world, outside of the Arunta district. The very rare exceptions, in cases where one out of a multitude of members of the Warramunga tribe does not inherit his father's totem, while the totems remain in their original moieties, do not seem to be explained by Mr. Spencer.[1]

The cause is not a reversion to the inheritance of the mother's totem, for the child, in these rare cases, is always of a totem in his father's moiety. Does some freakish matron insist on initiating the Arunta peculiarity? I find no explanation given.

Nor does Mr. Spencer mention any case among the Arunta in which a woman not "prepared" for motherhood by intercourse with men,[2] receives and gives birth to a spirit child. I conceive that this circumstance would much astonish the Arunta.

Mr. Spencer himself, before he invented his present theory, that large unruly Arunta totem groups of the prime lawlessly dragged little totem groups into the wrong moieties, wrote, "it is the idea of spirit individuals associated with Churinga and resident in certain definite spots, that lies at the root of the present totemic system of the Arunta tribe."[1]

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[1] *N.T.C.A.*, pp. 163, 164, 165, 170.

[2] *Central Tribes*, pp. 92, 93.

That is the conspicuous truth. Unless we are prepared to say that this idea of reincarnation of primal spirits, attached to stone amulets, is primitive, and has been universal in the whole totemic world, there is not a sign of primitiveness about Arunta totemism. The stone amulet and reincarnation belief has modified their totemism.

We have already shown that the social organisation of the central and northern tribes generally, apart from the Arunta, bears every known note of high complexity and advance, as Mr. Spencer himself recognises in the theory which he shares with Mr. Howitt that all progress (save in certain peculiar cases not connected with the discussion), is from the simple to the complex. Consequently, when we find an isolated state of totemism in a tribe which, like the Arunta, has every mark of advance from the most primitive and simple organisation—male reckoning of descent, ten divisions regulating marriage, loss of moiety names—we cannot regard that isolated and eccentric type of totemism as primal, and as, at one time, universal.

The Arunta system holds that in the Alcheringa, or beginning, all persons of the Grub totem were in the moiety known by the name of its two classes, Bulthara Panunga.[2] This was in accordance with the primitive rule. But now some persons of the Grub totem are in the other moiety, Purula Kumara. Grubs are thus in *both* moieties. How did this occur ? how does it go on occurring ? Suppose that a woman of Snipe totem, with a husband of Purula (Kumara) moiety, and of any totem, say Iguana, in that moiety, conceives in a Grub district. She has, of course, entertained and bears a Grub totemic spirit, say a boy, whose totem is Grub. He *must* be of his father's moiety, Purula Kumara, and thus he passes out of the original moiety of the Grubs, Bulthara Panunga into the wrong moiety, Purula Kumara. There are thus Grubs in both moieties, and Grub male, in Bulthara Panunga, can marry Grub female, in Purula Kumara, which, all over the rest of the totemic world, is incest and a capital offence.

The thing has been made possible not by lawless "dragging" of totemic groups into the wrong moieties, as Mr. Spencer now suggests, but solely by the fact that the Arunta and Kaitish, alone of the central tribes, prefer their reincarnation creed to the older rule of hereditary descent of the totem, to which rule all the other central and northern tribes, by aid of adaptive myths, resolutely adhere. Even among the Kaitish the Arunta anomaly has, indeed, altered the old *laws*, "no marriage within the totem," but has not overcome *the traditional horror* of intertotemic marriage. "In the Kaitish . . . . it is a very rare thing for a man to marry a woman of the same totem as himself." North of the Kaitish "a man may not marry a woman of his own totem."[3]

Mr. Spencer thinks that all these northern tribes have at one time "held beliefs similar to those which now exist among the Arunta,"[1] but have drifted into harmony with the primitive model, totems hereditary and exogamous. But this is not easily thinkable. If it had been so, among all these northern tribes, as among the Arunta, totems would have been non-hereditary and non-exogamous, and any or all totems would have existed in both moieties. This would not have been the primitive practice, with which the Arunta were too lawless to comply, as Mr. Spencer himself declares.[2] But this plan would have prevailed. Suppose that the northern tribes then dropped the Arunta plan (as Mr. Spencer believes, that they had it and dropped it), and made totems thenceforth hereditary in the male line. Then the totems would *still* be present in *both* moieties, by inheritance, unless all the tribes deliberately reverted to Mr. Spencer's primitive system, and rearranged all the totems in such a manner that now no totem exists in both moieties. If all that was done, the north central tribes were, first, in the primitive state, totems hereditary, non-exogamous, and divided between the moieties. Next, they adopted the Arunta plan, totems non-hereditary, non-exogamous, and the same totems common to both moieties. Lastly, they deliberately reconstructed society, redistributed the totems, and reverted to the primitive model. Only by believing all that can we suppose that the north central tribes once shared the peculiar beliefs and usages of the Arunta as regards totemic exogamy. But perhaps all that can be believed! On that famous proof of primitiveness, the Arunta nescience of the facts of procreation, very few words suffice. Either the nescience is only found where the reincarnation (or incarnation) belief exists, or it is found everywhere (except among the south-eastern tribes). In the former case the nescience is the logical corollary of the reincarnation belief. No man, obviously, can beget a child which is already in existence. He can only "prepare" the woman for the reception of the child, and he does his best in that way.

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[1] *Central Tribes*, p. 123.

[2] *Central Tribes*, pp. 125, 126.

[3] *N.T.C.A.*, p. 175.

In the latter case, if the nescience is universal, the Arunta are no more primitive in their ignorance than are all the other tribes, except the knowing tribes who retain the primitive social organisation, and have not the incarnation belief.

Into Mr. Spencer's criticism of my own theory of the origin of totemic names and of the exogamy of the moieties, I do not propose to enter[3]. He has not succeeded in understanding my theory (as given in *Social Origins*, 1903) and no doubt I am to blame for the obscurity of my exposition. Possibly I have stated my case more clearly in a more recent book;[4] to several of his objections I have, I think, convincing replies to make, but this is not the place for that exercise. It is more to the purpose that he offers his own theory of the origin of the exogamous moieties, each with its own distinct set of totems, as observed in tribes of the simplest organisation. I offer criticism of his theory because it seems contradictory of his opinion that the central tribes are primitive.

His theory starts from behind the simplest type of native society. As we know, the very primitive tribes (Group B) which reckon descent in the female line, and have no classes or sub-classes, are organised in the following manner.

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[1] *N.T.C.A.*, p. 281.

[2] *Report A.A.A.S.*, pp. 421, 423.

[3] *Report A.A.A.S.*, pp. 419–421.

[4] *The Secret of the Totem* (1905).

Such a tribe has two moieties, say, *Kilpara* (Crow), *Mukwara* (Eagle Hawk). In *Kilpara* there are totem kins, and in *Mukwara* totem kins, the same totem never appearing in both moieties. Every man, woman, and child, is either of moiety *Kilpara* (Crow) in which case he or she *must* marry a woman or man of *Mukwara*, or is of *Mukwara* (Eagle Hawk) and *must* marry into *Kilpara*, that is, if he or she marries within the local tribe thus organised. In so marrying, of course, a person cannot wed another of his or her own totem, for no totem in *Mukwara*, to which I, a male, belong, is also found in *Kilpara*, and I must marry into *Kilpara*, where there is no girl of my own totem.

This is the simplest, and, for my own part, I think, with Mr. Howitt, is the most primitive organisation, while Mr. Spencer thinks it "very ancient."

Taking the organisation which has been described, how did it arise? Mr. Spencer postulates totemic groups as already in existence, and, from his books, and his address, he plainly means that these groups merely did magical and dramatic ceremonies, each for the behoof of its own totem, and for the tribal good and instruction. How the groups came to have any totems, why one set of men and women claimed the Rat, another the Kangaroo, another the Grub, does not seem to be explained; in fact, is not explained. In this condition of affairs, if there were any bars at all on sexual unions, we do not know what form they took; we do not know that there were any matrimonial bars.

Mr. Spencer now postulates the rise, in the native mind, of an abstract sense that "some further form of organisation was necessary beyond that of the totemic groups."[1] But what kind of organisation was necessary? organisation to what end? We are not told. The blacks simply went about panting for more organisation. It was an abstract desire. The beauty of organisation, in itself, as a general conception, appealed to these untutored minds. They said, "We are not organised enough," not as regards matrimony, or food, or military efficiency, but, just in a general way, "the feeling arose that some further organisation was necessary beyond that of the totemic groups."

Now, among other peoples, when institutions are consciously organised, they are organised in response to some actual want and need; in one direction or another. Not so among the early blacks. What *they* wanted was "further organisation" at large.

"The idea, judging by the present day savage, might simmer in the mind of some older man for a time, until, perhaps at some gathering of a number of groups, he spoke of it to one or two other old men, and between them they would evolve a scheme." The scheme, says Mr. Spencer, would be "the division of the" (totem) "groups into two series"; that, says Mr. Spencer, "would be the natural and simplest thing."

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[1] *Report A.A.A.S.*, p. 421.

But where was the point of this scheme? what better was the community for being arranged into two series of groups? The two series might play each other at hockey (they *do* play each other at games), but, otherwise, one sees no good in the scheme, which so pleased the popular fancy—that "groups in any one district adopting it would pass it on to more distant groups." This is perfectly natural, if the scheme produced any favourable results, but how could it do so? Human nature is imitative, but beyond the fact that each series of groups had now a name of its own, as I understand, a moiety name, what did anybody get by it? What change or improvement did the arrangement produce in any one direction?

In any case, one set of totem groups was now placed in one series, another set in the opposite series.

After describing the primal division of the totemic groups into two series and of the destruction of the scheme, among the Arunta, by the insubordinate conduct of a possible big Wild Cat group, Mr. Spencer does not at once tell us that the two divisions were ordered to be exogamous and intermarrying. He later alludes to that *ukase*, but never hints at its purpose, which is the thing we are pining to know. Mr. Spencer merely says, "Our theory demands deliberate action on the part of one man of superior intelligence who has influence enough with his fellow elders to make them agree with him, and to aid him in carrying out his plan."[1] The superior person's plan, as far as Mr. Spencer has hitherto described it, was "the division of the groups into two series,"[2] which is *not* the Arunta plan. My intelligence is so inferior to that of the organising man, of superior intelligence, that I cannot conceive *why* he wanted the division. Mr. Spencer's explanation that he had an abstract passion for organisation does not satisfy me: people who desire organisation desire it for a definite end. The man had no end but the gratification of an abstract passion for organising at large.

At all events, either this man or some other genius, must some day have said, "Here we are in two series; I move that the people in series *Mukwara* must never marry other Mukwarites, but marry Kilparites, while Kilparites must not marry Kilparites, but must only marry Mukwarites."

The man, apparently, did all this out of a mere freak. Mr. Spencer has suggested no reason why the man should have emitted the novel idea, nor why the other old men and the country in general received with favour this sudden, and, we would think, disagreeable, restriction to their matrimonial enjoyments.

The whole affair, as stated, is motiveless. The Australian genius said, "Let's cut off half our available supply of partners of the fair sex," and everybody voted the idea charming. I have outrun Mr. Spencer, for he only tells us, so far, that the man proposed the division of the groups "into two series." He has said nothing yet about the tabu on marriage between members of the same series, and about the rigid necessity of marrying into the opposite series. It is only my conjecture, so far, that one man of superior intelligence invented *these* rules.

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[1] *Report A.A.A.S.*, p. 420, note 1.

[2] *Report A.A.A.S.*, p. 421.

Similar intelligent men must have invented the same rules wherever totemic exogamy has existed, or the rule must have been diffused from one centre over the whole habitable globe. As no sort of human motive or "reason why" is alluded to by Mr. Spencer for the invention of these rules, the coincidence of widely separated wits in devising the same motiveless rules is absolutely amazing, or the diffusion is astonishing. Possibly Mr. Spencer means that the groups were divided into the two series, not merely from an abstract desire of organisation in general, but for the very purpose of tabuing marriage within either series and of enforcing it between members of the opposite series. Indeed, after discussing various other matters, he says at the close of his paper:[1] "The idea of exogamy as associated with the totem groups" (I am sure that he means *with the two distinct series of totem groups*) "arose with the deliberate formation of two exogamous moieties." On this showing, either the groups were divided into two series, and, after that, some one thought of forcing them to be exogamous and intermarrying, *wherefore* we do not know; or does Mr. Spencer mean that the division of groups into a pair of series was invented and executed for the precise and motiveless purpose of preventing men and women from marrying mates in their own series or moiety? But a man of superior intelligence would not lay down this new and drastic rule for no reason at all. No man of superior intelligence would do anything so irrational, unless he happened casually to dream of it, and thought his dream an inspiration from some supernormal source.

Is this Mr. Spencer's explanation? It *is* Mr. Howitt's!

Mr. Howitt remarks, "From what I know of the Australian savage I can see very clearly how such a change might be brought about. They universally believe that their deceased ancestors and kindred visit them during sleep, and counsel or warn them against dangers. . . I have known many such cases . . ." (which the present writer attributes to the subliminal self). "Such a man" (a "medicine man,") "if of great repute in his tribe, might readily bring about a social change by announcing to his fellow medicine-men a command received from some supernatural being, such as Kutchi of the Dieri, Bunjil of the Wurunjerri, or Daramulun of the Coast Murring."[2]

"The primitive central tribes believe in no such beings," Mr. Spencer says; but et that pass. Suppose a superior person *dreams* the plan of exogamous moieties. Mr. Spencer himself does suggest that magic for the behoof of the totem (Intichiuma) "may possibly have been in the first instance the suggestion of a dream."[3] (The dream recurred in North America and the Torres Islands.)

Let us take it at that: Exogamy was invented on the moiety system, in the confused condition of sleep, by a person of superior intelligence and influence. There was no waking motive to urge him to the invention: no desire, no felt want of any kind prompted him to limit the matrimonial range of his tribe. He merely dreamed of doing so—and not he alone, but various men in various parts of the world—and the dream was accepted on all sides. Or, perhaps, there was only one dreamer, and exogamy was diffused all over the world, from the solitary single centre where he dreamed his dream.

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[1] *Report A.A.A.S.*, p. 423. [2] *N.T.S.E.A.*, p. 89. [3] *Report A.A.A.S.*, p. 420.

I only suggest all this, because Mr. Spencer offers a dream as possibly the cause of totemic magic, which has reached North America. The dream hypothesis explains, beautifully, the entirely motiveless character of exogamy, for, on Mr. Spencer's theory, it *is* absolutely motiveless—as far as he knows. But the respect paid to dreams by savages enables us to understand why a motiveless proposal passed into an act, all the world over: it was a dream-notion, therefore inspired, and to be obeyed. Many people respect the monitions of the dreams of men of superior intelligence; even Nestor respected the dream of Agamemnon, because, as over-lord, Agamemnon was "dear to Zeus."

This theory is *not* Mr. Spencer's, but it is Mr. Howitt's, and Mr. Spencer thinks that Intichiuma may have been suggested by a dream. The theory is not my own, because I believe exogamy to be the natural and rational result of the passions and reasoning powers of men wide awake: I believe that, for every single step in a long and complex series of stages, men had their definite reasons, reasons truly rational, in the state of their logical faculties. I wish I could accept the dream theory, because it first explains why a course which seems totally motiveless, from Mr. Spencer's point of view, was taken; and next, as exogamy has done excellent service to the progress of society, the monitory dream would look very like a super-normal revelation. But alas! I have another theory: Exogamy was the result of a very slow evolution, and the causes were human passions implicit in human reason. Nothing motiveless was done; each step in the progress had its motive.

Mr. Spencer's theory appears to me to proclaim his inability to imagine a motive for his postulated division of a society, hitherto possessing no marriage rules, into a pair of intermarrying exogamous moieties. In this respect his hypothesis resembles all the hypotheses which demand the bisection of a tribe. No motive which will bear criticising has ever been assigned for the "bisection." In his first book Mr. Spencer expressed the opinion to which I adhere. "It seems as if, in the case of the Central Australian tribes, the totemic system has undergone a somewhat curious development . . . ."[1] That is just what has happened. The reincarnation belief, *plus* the belief in spirit-haunted stone plaques with geometrical patterns, has caused Arunta totemism to develop very curiously indeed.

Meanwhile the Arunta belief and practice are "what lies at the root of the present totemic system of the Arunta tribe." The belief has mixed their totems into both moieties, so that men and women may now marry into their own totem. Among the Kaitish, however, the ancient prohibition, "no marriage within the totem," though no longer enforced, survives strongly enough to make marriages between persons of the same totem extremely rare; consequently the totems

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[1] *Central Tribes*, p. 211.

On this view, the Arunta appear to be the most advanced and specialised of the Central Tribes, except on one point. They have received, recently, northern names for four of their eight sub-classes. These four had previously been extant, but anonymous.

ON THE ORIGIN OF "EOLITHIC" FLINTS BY NATURAL CAUSES, ESPECIALLY BY THE FOUNDERING OF DRIFTS.

By S. Hazzledine Warren, F.G.S.

[With Plate XXVI.]

I think that we, who do not accept the eoliths as human implements, have not spoken what is in our minds freely enough. This is neither fair to ourselves, to our opponents, nor to the theory itself. It is but a poor compliment to the theory to pass it over with a vague expression of incredulity. It is notable enough to deserve to have the worst said of it that can be said, and to stand or fall by the issue.

We cannot all undertake a thorough examination of the field evidence, and so we feel a natural reticence in speaking. This is a right feeling, but it may be carried too far.

Although one may not be able to speak with personal authority upon the field evidence in the district that must be considered as typical of this country, one may yet be able, perhaps, to throw some light upon other aspects of the subject, or to raise suggestive points for consideration. In fact, field evidence has no bearing upon the question at issue. It is not the geological position of the eoliths that is primarily in dispute, but whether they are, or are not, of human fabrication. Local field evidence cannot help us here; it is a knowledge of the fracture of flint under different conditions that we require. And I may say that I have been conducting experiments upon the fracture of flint, as bearing directly upon the eolithic question, for more than five years.

Beyond this it is not very attractive deliberately to undertake destruction. So I confess that it is with regret that I attack the theory of eolithic man. I firmly believe that man existed long prior to the earliest palæolithic implements yet recognised in this country. But I cannot feel that any evidence that has been brought forward in positive proof of his existence in pre-palæolithic times is worthy to command our belief.

None would hail the advent of the eolithic theory with greater joy than I, if it appeared to my judgment to be defensible. It would fill a gap that wants filling up in the history of the human race. It would be a triumph of science to prove so much from such unpromising material. On every side, it makes a strong appeal to one's imagination, but, for this very reason, we ought to be sure of our proofs that we may not be led astray.

Are these chipped flints, upon which so much reliance has been placed by many of our geologists and archæologists, of such a nature that they cannot reasonably be supposed to have been made by natural causes?—and not made rarely, but frequently and in considerable numbers.

Much has been made of the fact that they conform to a certain definite series of types.[1] It is argued from this that they must be due to intelligent design on the part of man. To this I venture to give a flat *non sequitur.* The argument, though attractive on the surface, is unscientific to the core.

Surely the same material, acted upon by the same forces, of whatever nature these may be, is likely to give rise to similar results? Human activity does not stand alone in this respect.

The fracture of flint, under the operation of natural forces, takes certain definite lines. One can collect large numbers of naturally broken flints that conform to the same type.[2] This must be familiar to everyone who has ever visited a gravel pit—or walked a ploughed field—in search of implements. The eoliths are flints of natural shape which conform to a certain definite series of types, and, in addition, show evidences of certain, equally definite, kinds of chipping. In fact, of a great proportion of them, one can only say that they show evidence of a similar kind of wear. For large numbers of them do not profess to be actually worked, but, at the best, "implements" by virtue of use rather than of fabrication. In any case, similar original shapes, exposed to similar causes of chipping, must necessarily prove similar in the end.

The obtaining of long series of flints of certain types is purely a matter of industry and careful selection; therefore, it seems to me, we can place no reliance upon the argument that similarity of form proves the operation of intelligent design. The point is rather, can we, apart from this, prove that this chipping must have been done by man, and could not have been done by nature? If it could have been done by nature, we plainly are not justified in referring it to human agency without the strongest collateral evidence. And of such evidence there is none.

It may be said: if you believe that man existed in pre-palæolithic times, where then are his implements, if these be rejected?

To this I should reply that there is no reason to conclude that pre-palæolithic man lived in this region of the world. Or, if he did live here, he may have possessed no handicrafts whatever—as is believed to be the case with the Kattea,[3] the most primitive race of South Africa—the palæolithic culture may have been introduced ready-made from more southern areas; or may, indeed, have developed more rapidly than we think. Or again, if he did live here, and has left recognisable traces of his presence, these may not have been discovered.

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[1] See, for instance, F. J. Bennett, *Geol. Mag.*, 1903, p. 127.

[2] A series of the natural forms assumed by flint, arranged by Professor T. McKenny Hughes, may be seen in the Geological Survey Museum, Jermyn Street, London. There is also a series in the Leicester Museum, arranged by the curator, Mr. Montagu Browne, F.G.S.

[3] Professor A. H. Keane, "The Boer States," p. 73.

Before going into the more elaborate details, I would like to refer to one or two further objections and difficulties of a general character.

One of these is the difficulty of drawing a line between the work of nature and the supposed work of man. It is true that there is a borderland in the case of the well-recognised prehistoric periods. One finds a certain number of flints of which all one can say is that they may have been slightly modified by man to suit some temporary purpose. But when one has gained some little practical experience from doing a little flint working oneself, the number of these doubtful forms is surprisingly small. No one could say that the difficulty was of the same order as it is in the case of the eoliths. And, what is of greater moment, who among us would ever found an important conclusion upon these doubtful forms ?

Another difficulty is in the geological antiquity to which the supposed eolithic "industries" of M. Rutot go back. They can undoubtedly be traced back to the Upper Miocene, and perhaps even to the Lower Miocene.[1] While formerly, at least, M. Rutot held that these early eoliths belonged to a more advanced type of industry (Reutelo-Mesvinien and Mesvinien) than the Reutelien of the Early Pleistocene.[2] This is hardly what one might expect.

Passing from generalities, we will now proceed to consider the more important classes of eolithic types in greater detail.

I should class the eoliths into the following three primary divisions, with certain subdivisions, no matter whether they be due to human or non-human agency :—

Class 1. *Flints with Battered Surfaces.*

Formed by prolonged concussions.

Class 2. *Flints with Flaked Surfaces.*

Formed by the percussion of sharp blows.

Class 3. *Flints with Chipped Edges.*

Divided into—

Series 1. Formed by battering on the edge.
Series 2. Formed by pressure on the edge.

There is a well-marked intermediate series between the first and second classes ; that is to say, flints which are both flaked and battered. The second and third classes also pass into each other.

In this paper I shall endeavour to show that the flints with battered or flaked surfaces, and also those with battered edges, are due to water-abrasion. While those with pressure-chipped edges, to which series the bulk of the "Plateau implements" of Sir Joseph Prestwich[1] belong, and among which points of a peculiar type are so notable, are, in my opinion, due to what I shall propose to name "*soil-abrasion*." That is to say, I shall endeavour to show that these were formed by the grinding together of stones under pressure, due to differential movements in the drifts in which they were embedded.

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[1] "Le Préhistorique dans l'Europe centrale," *C. R. Congrès d'Archéol., etc.*, Dinant, 1903. Since this paper was written, Mr. O. M. Dalton has drawn my attention to a note by M. A. Laville, on "Les Pseudo-Éolithes du Sénonien et de l'Éocene Inférieure," in *La Feuille des Jeune Naturalistes*, IV^{e} sér., 36^{e} anné, January 1, 1906, No. 423.

[2] "Sur L'homme Préquaternaire," *Bull. Soc. d'Anthrop. Bruxelles*, vol. xix, 1900, p. 18 of reprint. "Note sur la position stratigraphique de la *Corbicula Fluminalis*," *Bull. Soc. Belge Géol.*, Bruxelles, vol. xiv, 1900, p. 7 of reprint.

It may here be pointed out that it may be taken as a general rule that pressure upon the edges makes for the production of notches and points; while rolling brings about the destruction of points, the production of battering, and also (this is important) the effect of what is known as "*free* flaking" by percussion. Both the battering and the flaking are seen on the more exposed parts of the flints. The meaning and the proof of these statements will unfold themselves in the sequel.

1. FLINTS WITH BATTERED SURFACES.

These are essentially different from the typical Plateau flints of Kent. They are classed under the name of "percuteurs" by M. Rutot,[2] and are especially characteristic of his Reutelien epoch, the earliest stage of his system of classification. They undoubtedly owe their form to a different process from that with which I shall chiefly deal here. They have suffered, not from pressure against their edges, but from concussion upon their surfaces. Why this contusion should be referred to human agency (of the existence of which there is no extraneous evidence) rather than to the inevitable concussions in the course of a torrential stream (of the existence of which we have abundant evidence) I must simply confess that I do not understand. It is far otherwise with the eoliths of the second and third classes, but here, it seems to me, it is only necessary to picture to oneself the conditions in a swift stream, and then, if there were any doubt upon the subject, one will soon be convinced that these "percuteurs" may quite easily be produced by natural causes. They are flint nodules in process of being converted into pebbles. If proof of this be needed, one can find it in the wash-mill flints of M. Boule. In any case, these cannot stand alone without the more convincing forms, so I need not dwell further on the point.

2. FLINTS WITH FLAKED SURFACES.

A certain proportion of the eoliths owe their form, not to pressure-chipping on their edges, but to "free flaking" by percussion. That is to say, they have been struck near their edges by a greater or less number of blows, such as might be given by the hand of man, or in the general *mêlée* in the bed of a swift stream.[1] This class presents a considerable variety of forms, both in size and shape. They seem to defy anything like a general description, but they are all more or less flaked over their surfaces. Many of these types have been figured by M. Rutot.

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[1] *Quart. Journ. Geol. Soc.*, vol. xlvii, 1891, pp. 126–160. *Journ. Anthrop. Inst.*, vol. xxi, 1892, pp. 246–270. The latter paper reprinted with revisions in the author's *Controverted Questions of Geology*, 1895.

[2] A. Rutot, "Sur la distribution des industries paléolithiques dans les couches quaternaires de la Belgique," *C. R. Congrès Intern. d'Anthrop. d'Archéol. préhist.*, XII^{e} Session, 1900. "Étude geologique et anthropologique du gisement de Cergy," *Mém. Soc. d'Anthrop. Bruxelles*, vol. xx, 1902.

I take it that evidence from design is furnished by some definite fabrication making for the production of a piercing point, a cutting edge, something to hack or hammer with, or other thing of like nature, together with suitability for grasping in the hand, or for fastening effectively in a separate haft.

As a matter of fact, any stone that one may pick up is capable of being grasped in the hand, and also of forming something to hack or to hammer with, or, where it presents more or less keen edges, of something to cut or scrape. But beyond that, which any stone may be, these forms give little support to any argument from design.

The best of them are no more than natural stones from which a few flakes have been removed along the lines of least resistance. Anyone who has done any flint-working himself will follow me when I say that there are certain lines along which a flint will flake with the greatest of ease, while along others it may be battered to a surprising extent until at last it is shivered into fragments, but along which it is extremely difficult, or sometimes quite impossible, to get it to flake at all. What conclusion are we to draw from this? Can we say that eolithic man had acquired the skill necessary to flake flint along the lines of least resistance, but was unable to exercise any control over the more refractory directions?—I am afraid not.

It will meet the case equally well to say that the flint, on being subjected to a fortuitous multitude of blows in all directions in the bed of a river, will yield to the blows which happen to be delivered along the lines of least resistance, while it will withstand those acting in the more refractory directions.

If we can equally well imagine the flint to owe its form to natural causes as to human agency, surely it is unscientific to invoke the latter.

But these are not the dominant forms of our English eoliths; if they be anything, they tend to approach the Early Palæolithic types.[2] In my opinion, however, there is a gulf between them; a fundamental difference, not of degree, but in kind. The one presenting nothing which might not be the fortuitous accidents of nature, the other presenting unmistakable evidence of design.

The origin of the first and second classes of the eoliths will be referred to again when the effects of water-abrasion in a river-bed are considered.

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[1] Compare the effect of wave action, Plate XXVI, Figs. 1 and 1*a*.

[2] I do not say that some proportion of M. Rutot's later Mesvinien "eoliths" (so-called) may not be human implements. But, even if they be, they do not carry the human period further back than we know it in England. The scale of this Author is not in accordance with that generally recognised; he calls the Moustérien series Acheuléen, and what he calls Chelléen are our ordinary Acheuléen forms, so that there is room for our Early Palæolithic stage before his Chelléen. But this series has nothing in common with the true eoliths.

3. FLINTS WITH CHIPPED EDGES.

These I take to be the typical and dominant eoliths; that is, as we chiefly know them in England. There are certain important points about these flints. They have not been flaked by direct percussion of freely delivered blows, but either by pressure, or by a kind of indiscriminate battering, delivered on the edge; the pressure having acted perpendicularly to the face of the flint. Where they are made from flints that are flat on one surface and rounded on the other, they are chipped from the flat surface, and therefore the flaking is seen on the rounded surface. Where they are made of flints that are tabular, or approximately flat on both surfaces, they are very frequently chipped at different parts of their edge from opposite sides.

The chief forms produced are an indiscriminately chipped edge, and the notch, either single or in various combinations. The double notched type, that is, two notches a short distance apart, chipped either from the same or from opposite sides of the flint, and leaving a point between, is one of the most noteworthy and characteristic forms.

I divide this class of eoliths into two series, the battered and the pressure-chipped. These two series, if natural, owe their form to different causes; and if human implements, to different methods of work.

The distinction between them is consequently of much importance, but need not be dealt with fully until it has to be taken into account in reference to the effects of water-abrasion. This much only need be said now: I will take it as proved that water-abrasion, pure and simple, will not distinctly press two stones together with considerable force. For this to happen in Nature, they would have to be held together in some sufficiently unyielding material. I think no one will quarrel with that as an axiom.

I shall now deal chiefly with eoliths of the third class. It does not appear to me necessary to deal so fully with those of the first and second classes, as this has already been done by M. Boule.[1] But I think that his work does not fully meet the case in regard to eoliths of the third class, without some further light being thrown upon the effects of pressure clearly separated from those due to rolling and concussion.

The possible means that suggest themselves by which eoliths may have been formed are:—

1. Human agency.
2. Water-abrasion by wave action.
3. Water-abrasion by streams, rivers, and floods.
4. Soil-abrasion by the pressure and movements of soil-creep and foundering.
5. The drag of ice.
6. Wear and tear on the surface of the ground.[2]

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[1] M. Boule, *L'Anthropologie*, vol. xvi, 1905, pp. 257–267.

[2] I have not thought it necessary to consider the effects of frost flaking, as this is so manifestly inapplicable to the particular forms assumed by the eoliths.

1. HUMAN AGENCY.

Many of these flints, especially the double notches with intervening point, are very suggestive of human agency. If the presentation of a serviceable cutting-edge can seldom be claimed for them, yet there are, on the other hand, many very serviceable points, and scraping edges of a variety of shapes are of general occurrence. If they be of human origin it appears to me that the ideal in the mind of the workers was the production of a serviceable scraping edge, for the points are often of secondary importance.

Is this what one might expect the early efforts of man in stone implement making to be? Personally, I should expect the first efforts of man in this direction to be this: That he would break a stone to pieces, and then select such fragments as suited his purpose. But the results of this would hardly be recognisable.

By the time he conceived the idea of holding a flint in his hand, and deliberately chipping it with another stone, which is claimed for a certain proportion of the eoliths, one does not see, so far as skill is concerned, why he should not do better work. On the other hand it must not be forgotten that primitive handicrafts are more under the control of custom and belief than obtains with a more advanced civilisation.

The Seri of the Gulf of California[1] use little or nothing but unmodified or almost unmodified natural objects, such as the teeth and talons of animals. It is part of their creed to do so. Of stone they use only rolled beach pebbles, and when one is accidentally broken they throw it away, and the place where it lies may be "tabooed" to the whole tribe. To fabricate a stone except to a very slight extent, would offend its spirit, and violate the relation in which they imagine that they stand with the unseen world around them.

Here, I take it, it is not so much want of skill, as a prohibition from using it, that is in question. So far as skill is concerned, the palæolithic flint worker would have been perfectly capable of executing a great number at least of the neolithic forms. The difference was primarily custom which directed his methods of work along different channels. The change from palæolithic to neolithic is far more subtle than a mere development of skill; it is of the mind rather than of the hand; it is a growth of new ideas.

Viewed in this light there is nothing unfavourable in the eolithic flints being confined to these types. If custom, in some strange way, became fixed in this groove, so it might remain for long periods.

And the length of the period would account for any reasonable abundance of these forms, though when M. Rutot speaks of 25 per cent.[2] and even

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[1] W. J. McGee, *Bull. Bureau of Amer. Ethnology*, 17, pt. 1, 1896.

[2] "Sur la distribution des Industries Paléolithiques dans les Couches Quaternaires de la Belgique," *C. R. Congrès Intern. d'Anthrop. d'Archéol. préhist.*, XII^e Session, Paris, 1900, p. 13 of the reprint.

50 per cent.[1] of the mass of river-gravels being composed of worked flints, one must confess that it seems rather extraordinary.

A fact which tells against the human origin of these flints is that eolithic chipping occurs on the edges of palæolithic implements. In some cases it might very well be maintained that this chipping was due to human agency. In fact, I have in my own collection several examples of re-entrant curves on palæolithic implements, which appear to be definitely worked. One of these, in particular, is a rude discoidal implement from Warren Hill, Mildenhall. But the hollow curve here has every appearance of being formed by designed flaking, which is entirely in accordance with the flaking of the rest of the implement. Therefore, I consider that, as it occurs upon an undoubted implement, the balance of the evidence is altogether in favour of its being genuine work.

In other cases, however, and in those, too, which have much more in common with the eolithic chipping, the balance of the evidence is entirely on the other side.

Mr. W. Cunnington[2] has described examples of this character, where the eolithic chipping can neither be claimed as secondary work, nor as the result of artificial wear in the original use of the implement. I have examined one of those described by Mr. Cunnington with great care, and it is perfectly clear that the eolithic chipping occurs on a frost-flaked surface that was an accidental injury to the implement, not only subsequent to its fabrication, but subsequent to its abrasion and patination.

The simple and natural explanation of this is that the eolithic chipping is due to natural causes. To assume it to be an instance of re-working of an old implement at a later date, is to assume that man made a more advanced and more useful implement into a more primitive and less useful one, whereas the contrary is the general rule for re-worked implements. It further assumes that man, long after the Early Palæolithic Age, to which the implement belongs, still continued to make the eolithic types; and this example is by no means isolated. I have, besides others, a very notable instance in a Moustérien trimmed flake from Swanscombe, with later eolithic chipping on its edge.[3] Among the others that I have may be mentioned an ovate implement from Poitou, also with subsequent eolithic chipping on its edge.[4] So it is clear that if this eolithic re-chipping was done by man he did it not infrequently, and to a comparatively late date.

However unlikely this may be, it is of course conceivable that these might be instances of re-working, and what we want is not probability but demonstration; or rather, these might be instances of re-working, if they were, in reality, instances of working at all. And here it is, as I take it, that we find the proof that we require. These examples of subsequent eolithic re-chipping bear none of the characteristics of designed flaking, while they present every feature of fortuitous pressure-chipping.

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[1] "Défense des Éolithes," *Bull. Soc. d'Anthrop. Bruxelles*, vol. xx, 1902, p. 51 of the reprint.

[2] *Quart. Journ. Geol. Soc.*, vol. liv, 1898, p. 291.

[3] See Plate XXVI, Figs. 3 and 3*a*.

[4] See Plate XXVI, Fig. 2.

We not only find this pressure-chipping upon palæolithic implements, but we find it also, though generally on a smaller scale, upon the edges of neolithic implements, where it is also, very frequently, subsequent to the patination of the flint.

No confusion can arise—except in name—between this fortuitous perpendicular pressure-chipping, and the deliberate flaking by pressure, which is the highest development of the art of flaking. Neither the method of operation nor the effect produced have anything in common with each other.

This point naturally leads up to the question as to how far contemporary pressure-chipping upon the edges of undoubted implements may be taken to have been caused by artificial wear, and how far it must be rejected as natural wear. But the discussion of this would lead me too far from my present purpose, and I must regretfully pass it by.

In the December number of *Man*,[1] I have described how I found close imitations of eolithic flints on new roads, and that they had been chipped by pressure against other stones in the ground on the passage of cart wheels over them. The eolithic double notch with point is of very frequent occurrence among these. By a series of experiments I found that whatever was capable of forcibly pressing—whether by a sudden shock, or by a slower and more prolonged force—the edge of a suitably shaped flint against the surface of another stone, was also capable of producing the kind of chipped edge characteristic of the eolith.

[The Experiments.—At this stage of the proceedings some experiments were conducted in order to show practically the effects of perpendicular pressure upon the edges of flints. Some of these were placed against pebbles set in a block of cement and then stamped upon with the heel or struck with a piece of wood, while others were more slowly pressed against a pebble in a screw-press made expressly for the purpose. As time was limited, only some six or eight flints were experimented upon. Several of these, as frequently happens in these experiments, broke in the process, and the effect was consequently spoilt; but two of them, at least, were fairly successful, and showed a considerable amount of that type of high-angle "parallel flaking" (made almost instantaneously) such as is seen on the edges of the best examples of the "eolithic" flints.[2]]

The point to be decided is this: is the fact that imitations of eoliths can be produced by the artificial pressure of one stone against another any valid argument that they may be so produced in nature? And further, by what natural means could stones be thus pressed together in such a manner as to make these chipped eoliths? Personally, I do not doubt for a moment that these experiments are valid. But if one can answer the second question in the affirmative, namely—that there are forces in nature which can press stones forcibly together, then the validity of the experiments is sufficiently obvious, and need not trouble us further. Then if it be still maintained that these eoliths are human implements, it must be for the advocates of that theory to explain why eolithic man always chose stones of these particular shapes, and also why he always chipped them in the manner that fortuitous pressure is capable of doing.

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[1] *Man*, 1905, 103; 1906, 3.

[2] See Plate XXVI, Figs. 7, 17, and 17*a*.

2. WATER-ABRASION BY WAVE ACTION.

Although the final result of wave action, whether of the sea or of inland waters, is the pebble, there is no doubt that it is capable of producing, as accidental and temporary forms, certain types of the eoliths.

M. Rutot asserts that eoliths may be found in considerable numbers on sea-beaches. But he boldly claims for them an "eolithic" age,[1] just as palæolithic implements are sometimes found in these situations. Although a positive judgment could not be given without going into the local evidence in each alleged instance, one very much doubts whether this explanation would always meet the case. Indeed, Mr. George Coffey[2] has found such objects which had been only recently chipped by the sea.

It is possible that the eoliths of the Kentish Plateau might have been derived from marine formations of late Tertiary Age, which we know formerly existed in the area. But personally I do not believe that these particular eoliths owe their form to wave action at all. They appear to me to be distinctly pressure-chipped, and not battered by any form of water-abrasion.[3]

And, further, as the results of wave action are plainly inapplicable to the river gravels, I think this cause need not detain us further.

It is possible, however, that some of the eoliths which have been recorded from glacial gravels may be due to this cause. But this question can hardly be considered as of vital importance, and these discoveries will be referred to later on.

3. WATER-ABRASION BY STREAMS, RIVERS AND FLOODS.

As already stated, I think we may consider this cause as inapplicable to the pressure-chipped eoliths of the third class. Especially is this the case with the double notches with point, and those with reverse chipping. It seems impossible that free rolling in a river-bed, which makes for the destruction of points, could produce these forms.

At the same time, one must not forget that something more than free rolling must take place in the course of river erosion. If there were a flint stuck or wedged in some way in the bed of a river and with an edge pointing upwards, and a stream of stones and pebbles were driven against it by the current, it is manifest that its edge would become chipped in the eolithic style, even if it only remained in that position for a few moments before being swept away. Or, as a river was cutting its way into previously formed beds of gravel, a flint might be, as it were, attacked in a similar manner to the above, before being finally dislodged from its bed. One sometimes finds flints with several parallel flakes removed from one side; this has probably been accomplished in this manner.

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[1] A. Rutot, "Défense des Éolithes," *Bull. Soc. d'Anthrop. Bruxelles*, vol. xx, 1902, p. 43 of the reprint.

[2] Report, *Brit. Assoc. Advanc. Science*, 1901, p. 795.

[3] A. Santer Kennard, *Proc. Geol. Assoc.*, vol. xix, 1905, p. 88.

Again, there might be violent eddies swirling in a confined space where a fallen tree partially impeded the flow of the stream. These would cause much chipping on the edges of flints.

These causes would doubtless produce occasional approaches towards the pressure-chipped flints, but even then, the difference in the method would almost certainly reveal itself in the result. In practical experience of river gravels, one finds that this is so, and that the distinctly pressure-chipped forms are generally, though not entirely, absent, while the battered forms are characteristic. The palæolithic trimmed flake from Swanscombe, previously referred to, is one of these exceptions; for the later eolithic chipping on its edge is distinctly the work of pressure. But the gravel here lies upon chalk, and this example is evidently due to "soil-abrasion" by foundering, presently to be described, and not to water-abrasion at all. Such occasional pressure-chipped forms might also be produced by the foundering of the river banks where they are undermined by the stream; but this again, though an integral part of river work, is not water-abrasion.

It is notable that in most of the examples of pressure-chipping that I have from river gravels—other, that is, than *remanié* or derived specimens—one finds that the surfaces of the flints showing it are also striated. Although this striation is never seen in the river gravels to the extent that it is found in the hill drifts, it is yet sufficient to indicate that grinding together under pressure, whether by ice or by soil-movement, has actually taken place.

We must now consider the difference between the chipped edges due to battering and those due to pressure. The most important difference, perhaps, is the absence of the more advanced forms from the battered class. This is what one would expect if the theory of their origin advanced here be correct.

In some cases it might be difficult to distinguish between them, especially where one had only isolated examples to deal with. But where one has a series of each class, then the difference between them, and also between both of them and the effects of designed flaking, is perfectly apparent to the trained eye.

When one examines the eoliths of the river gravels, and the pressure-chipped forms made artificially; and then, when one compares these with the eoliths of the hill drifts, it gradually dawns upon one that whereas the latter certainly are pressure-chipped, the former are not.

I think one of the most conclusive proofs that the battered series are due to water-abrasion, is the fact that they pass by insensible gradations (which, indeed, is true of every class of eolith, but notably so here) into forms which no one would—or should—accept as anything but natural. In searching river gravels I sometimes had to look some time before I could find any suitable raw material for the experimental production of eoliths, which had not already been converted into more or less of an eolith. That is a matter of great import from more than one point of view. I will only say here that I ask those who accept as human implements the flints that happen to be "more," while they reject as natural those that happen to be "less," to show some essential difference in kind between them. If the difference be one of degree only, their human origin, it seems to me, is indefensible.

Further confirmation that these forms are natural is found in the wash-mill flints of M. Boule.[1] I have not followed up the effects of wash-mill work to the extent that has been done by this author. Indeed, the ordinary wash-mills of our brickfields are very different from those described by him.

But from time to time, for a good many years past, I have picked up such objects when I have chanced to notice them. Some of these are very fair flakes[2] with cone of percussion, facets on the outer face, and even some little secondary chipping on their edges. One is a hollow-scraper eolith of the battered class. Another is a flint nodule from which several flakes have been removed, and it much resembles a rude hand implement. This shows how careful one ought to be in accepting indiscriminately chipped flints as human work.

The flakes, however, have certain characteristics, especially in the trend of the surface ripplings of the fractured surfaces, which generally serve to distinguish them from the artificial product. They are exactly parallel with the forms which one finds to be characteristic of various Plateau Gravels, such as those of Hertfordshire and Essex, or of the Cromer Forest Bed.[3] They also occur in palæolithic river gravels in company with undoubted implements. Some of these flakes from the Cromer Forest Bed were found before Mr. Lewis Abbott's[4] paper was published, in which he claimed for them a human origin. But with this conclusion I most emphatically disagree.

To sum up the effects of water-abrasion. It is universally admitted that water-abrasion is capable of producing a contusion of surfaces, a chipping of edges by battering, and a considerable amount of "free flaking" by percussion. This I take to be the origin of the first and second classes of the eoliths, of the intermediate forms between the two, and of the first series of the third class. Those who would accept these forms as human implements place limits upon the above-mentioned processes of water-abrasion which appear to me altogether arbitrary and impossible.

My subsequent remarks will refer to the pressure-chipped flints only, unless expressly stated to the contrary.

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[1] M. Boule, *L'Anthropologie*, vol. xvi, 1905, pp. 257–267.
[2] See Plate XXVI, Figs. 4 and 4*a*.
[3] See Plate XXVI, Figs. 5 and 5*a*.
[4] *Natural Science*, vol. x, 1897, p. 89.

4. SOIL-ABRASION.

In contradistinction to water-abrasion, I propose to name the process about to be described as "soil-abrasion." I venture to think it is of far greater importance than has hitherto been recognised.

All geologists will be familiar with the action of soil-creep, and the operation of pressure beneath the surface. We find evidence of this work in many phases: on a superficial scale in the disturbance of drifts, the foundering of escarpments, and other matters, while at a greater depth there are a great variety of effects in the deformation of rocks. But into these latter we need not enter, as they do not concern us as prehistorians.

We are all familiar with what one may call the extreme form of soil-creep in the phenomena of the landslip. I need not go far into this question either, at least, not in so far as the more extensive landslips are concerned. I may mention, however, that I have an example of the last lower molar of *Elephas primigenius*, from the Warren, near Folkestone, which has been involved in one of the landslips that, owing to the peculiar geological structure, are of not infrequent occurrence in that locality.[1] Both surfaces of this tooth are deeply scored and striated by the slipping and sliding to which it has been subjected. The origin of such scratches and striations is an important link in the chain of my evidence. Instances where bones have been scored where they have lain in contact with each other in peat beds have also been recorded.

As already hinted, superficial movements are not confined to such extensive accidents as this. Neither are they confined to steep slopes, as one might imagine that they would be: a gently-inclined plane is quite sufficient.

The determining cause of all these phenomena, whether great or small, is water. Water percolates into the soil, especially down cracks and crevices, reduces the adhesion, and forms a lubricant. It is thus that the surface accumulations are continually moving down from higher to lower levels, always travelling grain by grain, and at more or less frequent intervals according to circumstances, sliding in masses of greater or less magnitude.[2]

Mr. W. Shone has dealt with the principles of subterranean erosion, chiefly in so far as they affect beds of unconsolidated sand and clay. He states that wherever water percolates through unconsolidated material along an inclined plane, it is constantly carrying the lighter materials out at the nearest point of escape, that is, at the point of outlet of a spring. The consequence of this is that, wherever a spring issues in the side of a valley under such conditions, it carries away the underlying material and causes the overlying material to founder down to fill its place. Even where this has been proceeding on a very insignificant scale in the valleys of little streamlets in the Cheshire plain, the author proves that foundering has taken place to the extent of 30 feet since the glacial period. This does not sound very extensive, but it is as much as could well take place under the circumstances, as it has reached the floor of the valley. This paper was read before the Geological Society in 1892, and I must refer to it for further details.[1]

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[1] W. Topley, *Proc. Geol. Assoc.*, vol. xiii, 1893, p. 41.

[2] Since this paper was written, an article by Mr. W. Galloway has appeared in the columns of *Nature*, vol. lxxiii, 1906, p. 425, on "The Landslide in the Rhymney Valley." He describes how a tract of glacial drift has been moving over its rock-bed with imperceptible slowness, and showing no superficial evidence of its motion, for many years. A railway, constructed about fifty years ago, crosses this area, and since its construction it has been deflected from its original course to the extent of from 6 to 10 feet. A stone bridge has also been distorted, and houses damaged.

But this principle does not only apply to such unconsolidated material. It must not be forgotten that all the mineral contained in spring water, whether in mechanical suspension or chemical solution, is derived from the subterranean erosion of the rocks through which it has passed. The effect of this must be very considerable indeed.

It must further be remembered that, upon a slope of even very moderate inclination, the amount of sliding may be out of all proportion to the actual amount of the subterranean erosion. While during the Pleistocene Period, when the rainfall was so much greater than now, all these processes must have been proportionally more active.

At the one end of the series, the landslip which precipitates a whole mountain side into the valley below, though abundantly powerful to chip the edges of flints by grinding them against other stones, is yet too local and infrequent in its occurrence to be the general cause of the eoliths. At the other end of the series, the perpetual grain by grain soil-creep described by Darwin,[2] where he found that on a grass slope of $9\frac{1}{2}°$, 2·4 cubic inches of earth crossed a line 1 yard long every year, is too feeble to have any such effect. Nor, again, would the individual creep of stones down a hillside be much more to the purpose. But between these extremes we have a series of gradations which are both sufficiently frequent and sufficiently powerful to supply at least a great part of the force we require, especially when the rainfall was greater.

In this connection one may call to mind the slip which produces no surface feature whatever, and only comes into our cognizance from the effect it has upon the foundations of our houses.

Another important point, noted in the recent text-book of Geology by Messrs. T. C. Chamberlain and R. D. Salisbury,[3] is the following. The inclination of trees from the perpendicular, where they are growing upon sloping ground, is caused by the differential movement of the more superficial soil over the sub-soil in which the roots of the trees are anchored. The movement indicated here is slow, and continuous, but powerful. Other movements are intermittent.

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[1] W. Shone, *Quart. Journ. Geol. Soc.*, vol. xlviii, 1892, pp. 96–103.

[2] C Darwin, *The Formation of Vegetable Mould through the Action of Worms*, 1881, p. 269.

[3] *Geology. Processes and their Results*, [vol. i], London, 1905, p. 218.

And this is not all. There is also the closely related series of phenomena in the foundering down of superficial accumulations, owing to the chemical solution of calcareous rocks beneath. The most familiar effect of this process is seen in the "piping" of the chalk.[1] Rainwater, percolating through the superficial deposits along certain channels of least resistance, unequally dissolves away the subjacent surface of the chalk, and this causes the overlying beds to founder down into the spaces thus left.

Some of these pipes are surprisingly narrow and deep, and they are filled with a heterogeneous accumulation of material—gravels, sands, and clays—in short, a mixture of whatever beds there may formerly have been overlying the chalk. It often happens that local subterranean erosion goes on for a long period without making any surface feature, as the superficial drift is left as a bridge over the cavity. Several instances have been recorded where the actual fall of these bridges has been observed to take place. Darwin[2] mentions five such subsidences as having come within his own knowledge, one of which happened in his own fields. These are described as having been several feet in diameter and some feet in depth. But others on a larger scale are recorded as having occurred in the magnesian limestone near Ripon.[3] One of these which fell in 1861 or 1862 is 30 feet in depth. Another which fell about 1828 is 30 feet in width and 60 feet in depth. Another which fell about 1846 is described as being now "planted as an orchard," so presumably it is even larger. Another engulphed a stack which some men had just been making, but fortunately had left. It was, doubtless, the weight of the stack which precipitated the catastrophe.

But it is not only this local piping with which one has to deal. Though these pipes are frequently very adjacent to each other, and must eventually unite, yet apart from this, and in the case of calcareous rocks like the chalk, there is also a general solution of the whole surface going on. This causes any drifts there may be on its surface to founder down, now in one place and now in another; on the average, perhaps, producing a fairly uniform effect. It is manifest that this action must cause differential movements in the mass, and set up pressures and stresses.

As Mr. Clement Reid[4] has pointed out, the clay-with-flints which caps the chalk, though composed of the residue from the solution of the chalk,[5] has yet been almost everywhere disturbed since Pliocene times, as it contains abundant remains of Tertiary strata up to and including the Pliocene.

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[1] J. Prestwich, "On the Origin of Sand and Gravel Pipes in the Chalk," *Quart. Journ. Geol. Soc.*, xi, 1855, p. 64.

[2] C. Darwin, *The Formation of Vegetable Mould through the Action of Worms*, 1881, p. 137.

[3] Rev. J. S. Tule, *Geol. Mag.*, 1868, p. 178.

[4] "Summary of the Geol. Survey of the U.K.," 1896, p. 78; see also W. Whitaker, "Geology of London," *Mem. Geol. Survey*, 1889, p. 281, where references will be found to earlier memoirs.

[5] That is to say, composed in part of this material, and in part (perhaps the greater part) of the remains of Tertiary strata or superficial drifts. Since this paper was written, Mr. A. J. Jukes-Browne has dealt with this question in a paper read before the Geological Society on January 10, 1906.

The condition of things indicated by these facts is easily pictured in the mind. Tertiary strata were formerly spread over the surface of the chalk. The surface of the area was denuded of the capping of Tertiary strata by subaërial erosion, leaving only scattered remnants of their presence, and at the same time the chalk was being dissolved away from its upper surface downwards by subterranean erosion. As the clay-with-flints, which was left as the residue from the solution of the chalk, foundered down into the spaces thus left by that solution, the remnants of the Tertiary strata became gradually carried down and involved in the mass of the clay-with-flints, where we find them to-day. Doubtless this was largely accelerated during the climatic conditions of the Glacial Period.

The bearing of these various processes on the eolithic question is obvious, and insistence has already been laid on it. It must not be expected that eoliths would be produced in all cases. There must be suitable raw material, the stones must be sufficiently near together to be pressed against each other, and one can also say in the abstract that the material in which they are embedded must not be too yielding. How this last matter would work out under subterranean conditions—whether the clay of the "clay-with-flints" would satisfy this condition, and, if so, at what depth it would satisfy it—I am not yet prepared to say. This much one may say, however, that where eoliths have been found in any abundance, they have generally been associated with some sort of gravel.

The next question which must be asked is this : Is the pressure which would be attained by the movements of superficial accumulations sufficient for the purpose of chipping the edges of flints in the eolithic style ? A cubic yard of material, such as we have to deal with, may be taken to weigh about a ton and a-half. It might very well happen then that at a depth of only 6 feet, two stones might be pressed together with a force of upwards of a ton. Added to this there might be, sometimes, the momentum acquired by a fall of a foot or more; while smaller forces than this would occur with greater frequence and at a less depth.

The actual force required to chip the edge of a flint varies according to the toughness of the flint and the thickness of its edge. The following may, however, be taken as a general guide:—A keen-edged flake may have a notch of some little depth chipped out of its edge by being merely grasped in the hands and pressed for a few moments against another stone. A little grinding action, such as would take place with soil-movements, greatly assists, but is not always necessary. A sudden stamp with one's heel, or a more prolonged pressure brought about by throwing one's weight down heavily, is sufficient to have the same result on a considerably blunter edge. This is capable of reproducing a very large proportion of the eoliths. On one occasion I succeeded after several successive stamps with my heel in chipping a notch out of the edge of a flint that was as blunt as could be seen on any eolith, and far more blunt than many of these forms. But this must be considered somewhat exceptional, and it was an example of the single notch only. The forms with an outward curve seem to require a greater pressure. The weight from the wheel of a cart passing over is abundantly sufficient to reproduce even the most exceptional examples of eolithic chipping, and this can seldom exceed two tons, whereas a far greater pressure might be reached in nature.

We can thus definitely answer the question whether nature is capable of chipping these flints. What can we say on the other side for eolithic man? How could he obtain the necessary pressure—especially in the case of those which are the finest examples of his supposed work—either as a result of use or by deliberate intention? He could not obtain the necessary pressure without the aid of some mechanical contrivance, and—even if it were conceivable that he should have this—the final result seems hardly worth the effort, when better things might be obtained so much more easily. And, on the other hand, no use of the flints as implements would be any more capable of producing the observed effects on their edges without the aid of great leverage.

But, it may be asked, is it demonstrable that it is pressure—and not a chipping of the edge caused by designed battering—which has produced these forms? Although it might not always be possible, as has already been stated, in an individual instance to differentiate the effects of pressure from those produced by any other means, yet I believe that there can be no doubt about the matter where one has a series to deal with. The evidence is complete on the point, and seems to admit of no other interpretation. I have dealt with this point both in previous parts of this paper and also in *Man*,[1] but it is so important that I venture to give a summary of the argument here. Firstly, the angle of chipping of this series of eoliths is the same as that obtained by pressure. Secondly, the character of the chipping and the trend of the surface ripplings of the fractures is, in all typical examples, absolutely identical in the case of the plateau eoliths and in that of the experimental pressure-effects. It is true that a small number of these eoliths are on the borderland, which might be due either to pressure-chipping or to designed flaking. But none of them cross the border. None of them present anything more than is seen in the best examples of perpendicular pressure, which very closely approach the effects of designed flaking. Thirdly, the general shape of these eoliths is the same as one may find on a new road, where the pressure is delivered without the guidance of intelligent design.

What one finds in this manner is really of more value than one's own experimental productions. For in the latter case there is the guiding intelligence to be discounted. This is a great hindrance, as one is prevented from obtaining any particular types, except such as one cannot help producing from the nature of the case.

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[1] *Man*, 1905, 103; 1906, 3.

We must now consider the drifts in which eoliths have been found.

The palæolithic drift of High Down,[1] in the Isle of Wight, is situated on the top of a narrow ridge of chalk. Although not at the highest part of the ridge, it is yet situated where such a deposit could not by any possibility be accumulated under the present physiographical conditions. The flints contained in it are in a great variety of conditions, some being greatly corroded and abraded, others being sharply angular. It is evidently a sweeping from, or redistribution of, the surface accumulations of a considerable geological period from some more elevated area which has now disappeared.

It yields palæolithic implements in some abundance, and in addition there are numbers of eolithic flints with pressure-chipped edges, many of them unabraded and contemporary. One of these, as described in *Man,* I found closely adhering to the rounded stone that had made it. But leaving this aside, one can say that, whatever they may be, these eoliths are certainly of palæolithic age; they do not even belong to an early stage of that period. Their occurrence in such intimate association with palæolithic implements is certainly favourable to their human origin, but as eoliths occur equally where there are no human implements, this argument breaks down. In any event—as is the case with the palæoliths with later eolithic chipping on their edges—they break down the argument for their great antiquity derived from their supposed absence, as contemporary examples, from palæolithic drifts. Certainly this supposed absence does not accord with my own experience. I have even found them of neolithic age. Professor Boyd Dawkins also states this as his experience.[2]

In addition to these eoliths, there are also numerous flints which are scratched and scored on their surfaces.[3] Now, it is manifest that if the soil-movements have been sufficiently powerful to score the surfaces of flints, which are difficult to scratch, they have also been powerful enough to chip their edges, which can be accomplished with comparative ease.

I take it that the Plateau Drift of Kent is a similar sweeping together of previously existent surface material from areas of the chalk which are now much reduced. Like the High Down drift, it contains scratched flints and eoliths. Mr. W. Cunnington[4] suggested that both the scratches and the eolithic chippings were due to movements in frozen or thawed gravel. I personally think that it is the thawed, rather than the frozen condition, that we want, as the latter—without the aid of ice passing over it—would tend to check movement.

In answering Mr. Wm. Cunnington, my friend Mr. A. Santer Kennard[5] maintained that there was no evidence of ice-action on the Kentish plateau. Now, in Mr. Benjamin Harrison's collection there are a few striated flints which are in the highest degree suggestive of ice-action. They possess deep and parallel striations. But these are exceptional, and I do not wish to force the evidence from such rare exceptions. The characteristic slight scratches, crossing the flints —and not infrequently the palæolithic implements—in all directions, do not seem to me to claim the hypothesis of ice. In fact, I rather incline to the view that even the deep parallel striations might be formed by soil-abrasion alone. At least, the point is a doubtful one, and I am willing to give the eolithic theory the benefit of the doubt.

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[1] S. Hazzledine Warren, *Geol. Mag.*, 1900, p. 406 ; 1902, p. 97.

[2] *Journ. Anthrop. Inst.*, vol. xxiii, 1894, p. 250.

[3] See Plate XXVI, Figs. 19 and 20.

[4] *Natural Science*, vol. xi, 1897, p. 327 ; *Quart. Journ. Geol. Soc.*, vol. liv, 1898, p. 291.

[5] *Natural Science*, vol. xii, 1898, p. 27.

Mr. Kennard also objects to Mr. Cunnington's idea that the scratches on the flints were produced by other flints, and suggests that they must have been produced by something much harder, namely, quartz grains. I think that Mr. Kennard may be right in this.

But both the ice-question and the method of the scratching are non-essential side-issues. The essential matter is the reference of the scratched surfaces and the chipped edges to the same cause, namely, movements in the gravel in which they were, or, at some former stage of their existence, have been embedded.

A point upon which some stress has been laid, both by Mr. Benjamin Harrison and also by Mr. J. Russell Larkby,[1] is the absence of palæolithic implements as surface finds from the highest levels. But I presume that palæolithic man, like his neolithic successor, dropped his implements over the surface at all levels. Their absence from the highest levels is nothing more than an indication of the surface drifting and soil-creep that has taken place since palæolithic times, and which has left those higher levels practically denuded of implements.

To take another instance of soil-abrasion. On the chalk areas the rainfall during the Pleistocene Period was greater than could be absorbed by the chalk. The surface was consequently broken up, and there resulted a gravel composed of a mixture of rolled fragments of chalk and flint. In course of time the contained chalk was dissolved away, and the insoluble residue foundered down into the spaces thus left, now in one place, now in another. As a result of this, the strata, which were formerly horizontal, became bent down into a series of festoons.

The drift at Alderbury, where Dr. Blackmore has found so many eoliths, is described by Professor T. McKenny Hughes[2] as being of this character. It is interesting to note that many of the eoliths found here show little or no sign of water-abrasion.[3] I therefore suggest that here, as in the palæolithic drift of High Down, we may perhaps have eoliths *in situ* in the drift in which they have been formed by soil-abrasion.

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[1] *The Antiquary*, N.S., vol. i, 1905, p. 98.

[2] *Proc. Cambridge Phil. Soc.*, vol. ix, 1896, p. 123.

[3] Rev. R. A. Bullen, *Trans. Victoria Institute*, vol. xxxiii, 1901, p. 213.

The only serious criticism of any of these processes, as a cause of the production of eoliths, which has come under my notice, is that by M. Rutot.[1] It must be confessed that the effect of his argument is very powerful. He tells us that he was formerly of opinion that the foundering of the soil was the cause of the production of eoliths, and how, when he visited the phosphate excavations in the environs of Mons, he was constrained, against all his preconceived opinions, to abandon that position.

Let us examine the reasons for this. The beds worked there were concentrated phosphatic deposits filling pipes in phosphatic chalk. A section of one of these pipes is figured, showing lines of flint nodules which are bent into a downward curve where they cross the pipe; and, in addition, are broken up along their planes of incipient fracture. As a straight line of nodules has become a downward curve, which is of course of greater length, their fragments have tended to be separated from each other, rather than to be forced together. What the nature of the flint fracture may be we are not informed, but in any case the conditions are plainly unfavourable for the formation of eoliths.

To judge by the figure given, the quantity of the residue (? aided by replacement) left from the solution of the chalk amounts to more than half its original bulk. This is altogether exceptional, the normal residue being only a small percentage.[2] In consequence of the large amount of residue, the lines of flint nodules, although bent, are still intact; the junction with the overlying Eocene is sharply defined; and there has been no kneading together of material such as normally takes place. Neither is there any mixed gravel here, such as one usually finds associated with eoliths.

Another important point upon which no information is given, and where, not knowing the country, one is consequently at a disadvantage, is the situation of the locality. If it be in a valley, as appears to be the case, the observation has obviously no bearing upon the conditions of hill areas. In any case, I fail to see that conclusions drawn from one particular locality have any bearing upon a wider area where the conditions are totally different. One cannot invalidate the positive evidence in one locality by negative evidence in another.

Besides this, the eoliths of the Belgian river gravels, described by M. Rutot, are not pressure-chipped. This is, in fact, a final answer so far as the Belgian eoliths are concerned, but as it might be thought that the argument would apply to other areas, I have dealt with it somewhat fully.

To sum up the effects of soil-abrasion as affecting the origin of eoliths. I freely grant that I cannot, in the nature of things, show an eolith that I have seen made by any process of soil-abrasion. But we have exact imitations of eoliths made by pressure. The inference is consequently forced upon one that the eoliths themselves were also made by pressure, and this eolithic man could not well have obtained. We further have a great variety of natural phenomena resulting in differential movements in superficial drifts, and as every cubic yard of soil weighs about a ton and a-half, this must take place under considerable pressure, and is therefore capable of producing the eoliths. It is further to be noted that the pressure-chipped eoliths are characteristic of those drifts which have suffered most from these movements, and which contain an abundance of suitable material.

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[1] "Défense des Éolithes. Les Actions Naturelles possibles sont inaptes à produire des Effets Semblables à la Retouche Intentionelle," *Bull. Soc. d'Anthrop. Bruxelles*, vol. xx, 1902, p. 56 of the reprint.

[2] In South-Eastern England the whole of the Middle and Upper Chalk was never less than 95 per cent. of pure calcium carbonate. W. Fraser Hume, *Proc. Geol. Assoc.*, vol. xiii, 1894, p. 245.

5. THE DRAG OF ICE.

The ice question in reference to the Plateau Drift of Kent has already been considered, and there is no need to repeat the conclusions arrived at.

There can be little doubt but that the drag of ice, acting upon beds of gravel, would have much the same effect in chipping the edges of flints as the phenomena we have just been considering—provided always that there be suitable material to work upon. But it also appears probable that, where we are dealing with boulder clays, these effects would not happen so frequently. The clay, it seems to me, would tend to form a cushion between the stones and boulders embedded in it; and might also be too yielding, except when frozen, to press them together with much force. But that these effects should happen occasionally, if my theory of the origin of these eoliths be correct, I freely grant. And that this is so—that these effects do occur—I think completes the chain of evidence that we require.

Eoliths have been recorded from the glacial beds of Norfolk by the Rev. R. Ashington Bullen,[1] from the North-West of England, North Wales, and the Isle of Man by Mr. J. Lomas,[2] and from Ireland by Mr. W. J. Knowles.[3] In these districts they occur to some extent in boulder clays, but, as one would expect, they are more abundant in the glacial gravels associated with them.

When I was examining a section of boulder clay near Leek, in Staffordshire, a few years ago, I found a giant eolith. Most of the boulders there are more or less rounded, and could not possibly be converted into eoliths. This one, however, was an exception. It was a piece of igneous rock 11¾ inches long, 7½ inches wide, and 3 inches thick, flat on one side and rounded on the other, and had the characteristic notch, 4 inches across, chipped out of one edge. As so often is the case with notches in flint, this had not been chipped out in one piece, but presented a number of facets. Of course, both the stone itself, and also the notch, are on a larger scale than the ordinary eoliths in flint, but this is not surprising when one considers the magnitude of the forces that I conceive to have made it.

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[1] Rev. R. Ashington Bullen, *Trans. Victoria Institute*, vol. xxxiii, 1901, p. 201.

[2] Report, *B.A.A.S.*, 1898, p. 882; also reported in *Geol. Mag.*, 1899, p. 80: *Proc. Liverpool Geol. Soc.*, vol. viii, 1899, pp. 334–346; Bullen, *op. cit.*, p. 209.

[3] Report, *B.A.A.S.*, 1902, p. 756.

6. WEAR AND TEAR ON THE SURFACE OF THE GROUND.

Professor T. McKenny Hughes[1] has suggested that the stampeding of a herd of oxen, or other similar occurrence, might chip many flints in the eolithic style. This suggestion has received remarkable confirmation from my experiments. As I have before stated on more than one occasion, surprising imitations of eoliths can be made by placing a suitably shaped flint with its edge against the rounded back of another stone embedded in the ground, and then stamping upon it with one's heel.

That this a possible cause of their production is, in fact, demonstrable.

Of course it will be argued that it would not often happen that a suitably shaped flint would be lying with its edge against another stone, and would then be stamped upon by some heavy animal. But that it might happen, and would happen, occasionally, no one can venture to deny. It might further be urged that it would not be on every occasion when this did happen that an eolith would be the result. This also is true. But on the other side it must be remembered that if this were going to happen constantly to every flint, there would soon be nothing but eoliths left; except, of course, the unsuitably shaped stones. Besides this, it is not the only means—nor in any way the most important means—by which I believe them to have been formed in nature. So the infrequency of its occurrence accords well with what we require as a subsidiary cause.

Some of the eoliths of Mr. Harrison, which have been found upon the surface, come under this category. Their mineral condition shows that they have nothing to do with the Plateau drift, and are, in some instances, clearly as late as the neolithic age, if not later.

CONCLUSION.

In conclusion, let me repeat that we may have eoliths of any age. Those of the first class are battered by concussion; those of the second class are chipped by percussion; while the first series of the third class are also chipped in a somewhat similar manner, but generally by a lighter battering. These I take to be the work of water-abrasion in a swift stream, and they are characteristic of river gravels of various ages.

The second series of the third class, or the "Plateau implements" of Sir J. Prestwich, have chipped edges produced by pressure. These I take to be the work of what I have called "soil-abrasion," which takes place during the foundering of drifts from various causes; and these are characteristic of hill-drifts. They not only occur in those hill-drifts which—if one may venture to trust negative evidence so far—appear to be pre-palæolithic, but also (as contemporary examples) in those which yield palæolithic implements. The age of such hill-drifts cannot be ascertained from a consideration of their elevation alone; they may be formed far above the base-level of the valley-system.

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[1] *Proc. Cambridge Phil. Soc.*, vol. ix, 1896, p. 124.

It is a very important point that the pressure-chipped eoliths occur abundantly in hill-drifts of palæolithic age, while they are of great rarity in the contemporary valley gravels.

Thus it is not the age, but the geological conditions under which a drift was formed, that influences the presence, and, where present, the character, of the eoliths it contains.

As subsidiary causes of the formation of eoliths, or those which have operated in certain special cases, we have wave-action, the drag of ice, and wear and tear on the surface of the ground.

I have spent some considerable trouble in endeavouring to disprove the theory of eolithic man. I can only say that I would far rather have spent twice the trouble in proving it, had it appeared to me possible to do so.

DISCUSSION.

Mr. J. **RUSSELL LARKBY** said that he congratulated the author on the manner in which he had marshalled his evidence, but was unable to accept his conclusions that these forms were merely the results of natural action. He wished to lay special emphasis on the isolation of these forms in high-level gravels where there was no true association with implements of palæolithic type. The association of palæolithic and eolithic types had been mooted, and Professor Boyd Dawkins had, from this supposed association, arrived at the conclusion that eoliths were merely natural forms.[1] The implements to which Professor Boyd Dawkins alluded are those in the Natural History Museum (Prestwich Collection); this evidence, however, came from Ash, Shoreham, Kent, which is at a comparatively low level and where we may reasonably expect such an association. If we require plateau evidence, then clearly we must go to the highest part of the plateau; and of this supposed association of eolithic and palæolithic forms, excavations at Terry's Lodge (763 feet O.D.) gave no confirmatory evidence. It was true that well-authenticated cases of the association of the two types must prove fatal to the authenticity of eoliths, but up to the present time we have not been confronted by such evidence. In all the high-level gravels examined by the speaker, he had not observed any true association of these types. He believed that the claim that these forms were geologically separated from the valley gravel type was unanswerable and conclusive as to the artificial origin of eolithic forms.

Mr. F. J. **BENNETT** said that he considered Mr. Warren rather begged the question by labelling various specimens as evidence of the direct action of the wash-mill, the stream or torrent, and sea or wave-action, for he noticed that one of the wash-mill flints showed, to his mind, say, nine-tenths human and only, say, one-tenth possible wash-mill action as seen in the shattered edge; and also a similar state of things in some other cases referred to streams, torrent, and sea-action. He considered that many of the chipped flints alleged to have been made by the wash-mill, were, in reality, human implements which had passed through the mill and been rolled. To prove how near he could get to what seemed possible mill-work, he had chipped one edge of a mill flint to imitate the possible milled edge, and had so treated this as to make it very difficult to detect his work from the possible mill-work.

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[1] *Man*, April, 1903, 31.

The Rev. H. G. O. KENDALL said :—As against Mr. Warren's argument that the stones are flaked and trimmed by fluviatile action. In the Knowle Farm Pit, Savernake, there are palæolithic implements in every stage of condition, from those which are quite sharp to those which are rolled almost into pebbles. On the rolled implements it is evident that nature's process has been that of gradual attrition, not the removal of chips or flakes. This would seem to show that a river of such force as that which once flowed at Knowle does not trim the edges of stones. On a considerable number of the implements from this pit there is " eolithic " chipping along one or both edges. A large series might be obtained, for instance, bearing on one edge the said chipping, in the eolithic " bow-shaped scraper " form. On many implements these chips are plainly of the same age as the flakings of the faces of the tools and were done at the same time, and the whole of the work, flaking and chipping, is often sharp and unworn. Either, therefore, nature both flaked the implement into shape and trimmed the edge, or man was responsible for all the work. For the implements have plainly not been rolled or moved perceptibly since the flaking was done. If, then, man was so fond of this particular form of scraper, and practised this chipping on palæolithic implements, there is strong presumptive evidence that he was responsible for the precisely similar forms of scraper and nature of chipping which exists (but without the flaking of the faces) on the eolithic tools. Again, as against any of Mr. Warren's arguments for the performance of the trimming of the edges in various ways by nature, I have an eolithic " hollow end scraper " from Hackpen Hill at 875 feet, and a similar tool from the Knowle Farm Pit. These, and others like them, exhibit, in the curve, parallel chippings such as I did not see on any of the stones that Mr. Warren passed round. If these hollow scrapers are the work of nature, and if Mr. Warren's methods of experiments resemble nature's methods, he ought to be able to produce similar tools. Mr. Kendall also drew attention to some microliths from the Knowle Pit.

Mr. M. A. C. HINTON said that Mr. Benjamin Harrison had kindly lent him a large series of eoliths to study, and many of these were now on the table to speak for themselves. He would on the present occasion deal with only one type of eolith and would confine himself to one specimen which well illustrated that type. This specimen had lately been obtained from a new pit at Terry's Lodge on the summit of the escarpment at a height of 770 feet O.D. The specimen showed an exceedingly delicate point with a hollow curve on either side. The flaking was confined to that portion of the edge which formed the point and curves. Both man and nature required an edge like that formed by the flat and convex sides as a basis for the flaking operation. Nature might, by the pressure flaking described by Mr. Warren, produce a form similar to this by taking a flake off from one side and one from the other so as to leave a point between them. In this specimen one was dealing, however, not with one or two flakes only, but with a great number, and the only agent which the speaker could regard as capable of doing this was the hand of man.

Mr. A. S. **Kennard** was of opinion that there was a tendency in some quarters to accept as human handiwork what was more probably the result of natural causes, such as stream action or beach action, but the eoliths of the North Downs could not be explained away by either of these causes or by pressure. There were many gravels which fulfilled all the requirements of Mr. Warren's theory, and yet these yielded no examples of "pressure" work. For instance, the gravel on Limpsfield Common, though yielding palæoliths, yielded no contemporary "eoliths," though a few derived examples occurred which from their condition undoubtedly came from the chalk summit. It was possible to grade a series of flints from the perfectly natural form to the highly finished palæolith, and where the line was to be drawn would always be a personal matter.

Mr. **Reginald Smith** remarked that, as the Puy-Courny (Cantal) flints belonging to the Upper Miocene had been accepted as human work by authorities conversant with the products of cement-tubs, worked flints in the mid-Pliocene drift of the Kent plateau were possible but unproved. Reference had been made to continual soil-movements even on slightly inclined planes; one of the chief objections to eoliths was that they were too numerous where they did occur and wanting in adjacent areas where they should occur, but centuries of denudation would naturally concentrate eoliths in the ancient river-valleys. Experiments in pressure-flaking were of vast importance, but did not prove that nature was responsible for the form of every flint in the Plateau drift.

Rev. R. **Ashington Bullen** said that, of the dozens of striated ochreous plateau-flints which he had submitted to Sir Joseph Prestwich (1890–5) for inspection, the latter, after the most careful microscopical examination, could discern on them no trace of glacial action. In answer to Mr. Warren's query, "Why eolithic man, if he existed, always chipped flints in the way that nature does?" Mr. Bullen raised the difficulty of the squared flints with straight edges. He failed to see how natural pressure-chipping could produce a rectangular implement with blunt edges, analogous to the blunt wooden sleekers used, up to a few years ago, by tanners to remove fat from skins. He also instanced the persistency of the boring type of implement, analogous to the engineer's steel bit of the present day, in which the chippings on each side of a point formed two roughly parallel planes, presenting, on rotation, a continuously cutting edge. He also exhibited specimens of round-ended scrapers, similar to neolithic forms, and was of opinion that if the latter showed human workmanship, there was no reason to exclude the earlier form. To his mind the above considerations contradicted the author's statement that "none of the eolithic flints approach designed flaking."

Mr. A. J. **Hogg** said that he was unable to agree with Mr. Warren's conception of what constituted an eolith, and considered that the term should cover all implements of the well-known red-brown tint and not merely those early forms which might almost be described as shapeless. This would allow the inclusion of many ancestral types of weapons and tools which, though not hitherto recognised, occur in the eolithic period and continue, with slight modifications, down to neolithic times.

Mr. **George Clinch** writes: I listened to Mr. S. Hazzledine Warren's paper with much interest and pleasure, and much regret that I was unable, owing to the lateness of the hour, to take part in the equally interesting discussion which followed. I think Mr. Warren deserves great praise for the fairness and precision with which he stated the case against "eolithic" flints being due to human agency. I may say that I have known Mr. Benjamin Harrison, of Ightham, for about twenty years. I have repeatedly inspected his collection of "eoliths" and have heard his arguments, but I have never yet been convinced that the crushed and battered edges of the flints to which he points are necessarily of human or artificial origin. One of the features of the "eoliths" from the Ightham district which, I think, points to the crushing of flints together in the gravel beds, as the origin of what Mr. Harrison and others regard as artificial work, is that the various fractures on the same flint present differences of colour and are obviously of different periods. This is what one would expect if the flints have been shaped in the beds by the forces arising from repeated expansion and contraction caused by great variations of temperature. Another point which, I think, is of some importance is that "eoliths" would have made such very poor tools or weapons for any conceivable purpose. Mr. Harrison seems to admit this, and suggests that they were "body-scrapers," used mainly for removing the hard skin from the feet of human beings. I find it very difficult to believe that any man with sufficient intelligence to shape flint by means of chipping or crushing should have gone on so long producing tools of such a low type and, one would imagine, so much inferior in every way to natural objects of bone, horn, or wood, which must have been easily procurable. I think Mr. Warren's experiments give a complete and satisfactory explanation of the kind of crushing forces by which the so-called "eoliths" were shaped.

The AUTHOR replied to the objections of each speaker in detail, but, as several of the speakers raised similar objections, the arguments may be summarised as follows. He said that if it be true that palæoliths and eoliths are not associated together as contemporary relics in the Plateau drift of Kent, it is no less true that they are so associated elsewhere.[1] With reference to the specimens to which attention had been drawn by several of the speakers, as showing parallel flaking or other features which, it was alleged, could not have been produced by fortuitous pressure, the author had not the slightest hesitation in saying that, however remarkable they might appear at first sight, it was yet demonstrable that they could be so produced. A study of the imitation eoliths made experimentally proved this. In answer to Mr. Bennett, nothing was placed on the table as the work of the wash-mill or of the sea which was not such. The condition of the flint alone proved that the fractures were quite modern.[2] The general absence of pressure-chipped eoliths from river gravels referred to by some of the objectors, the author stated to be strictly in accordance with his theory. With reference to a remark by Mr. Kennard that it would always be a merely personal matter where the line between "nature and art" was to be drawn, the author replied that it was a part of the work of prehistoric archæology, as a science, to determine where this line was to be drawn. If this speaker admitted that this line could not be drawn so as to include all the supposed eoliths, and further admitted that no definite line could be drawn in the middle of the eoliths, then it must be drawn above the eoliths altogether. In reply to Mr. Hogg, he said that the conception of an eolith that he had dealt with was not his; he was dealing with other people's conceptions, as universally understood in this country and on the Continent of Europe.

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[1] This fact was freely admitted by several of the speakers. That palæoliths should be absent from many high-level drifts is not surprising, but this in no way proves the contention of Mr. Larkby, that such chipped flints as are present must owe their chipping to human agency.

[2] I did not understand Mr. Bennett's meaning on the evening of the meeting with reference to his having succeeded in imitating the effects of the wash-mill. That this can be done, by deliberate intention and with the exercise of due care, only proves the skill of the worker in being able to mask the usual evidences of designed flaking. It does not prove that what can be shown to be the normal effect of fortuitous causes to-day must have been the product of intelligent design on the part of man in past geological periods.—S. H. W.

Description of Plate XXVI.

EFFECTS OF FORTUITOUS PERCUSSION AND PRESSURE IN THE CHIPPING OF FLINT.

Fig. 1.—Effects of marine abrasion. Numerous flakes have been removed over the surface along the lines of least resistance, producing a remarkable simulation of human work.

Fig. 1*a*.—Reverse side of the same: Outer crust of the flint with slightly chipped edges.

Fig. 2.—Palæolithic implement of ovate type from Poitou. This shows a pressure-chipped notch on one side of the point, and a pressure-chipped edge on the other side; all this chipping is subsequent to the patination of the worked surfaces of the implement.

Fig. 3.—Palæolithic trimmed flake from Milton Street, Swanscombe, showing a pressure-chipped notch, besides other chipping, subsequent to the patination of the implement.

Fig. 3*a*.—Side view of the same.

Note.—The later pressure-chipping in Figs. 2, 3, and 3*a* is represented in outline only, without any shading, to distinguish it from the worked parts.

Fig. 4.—Inner face of characteristic water-abrasion type of flake; the work of the wash-mill.

Fig. 4*a*.—Outer face of the same, showing facets left by the removal of other flakes.

Fig. 5.—A similar example, but of natural water-abrasion, from the "Forest Bed" of Cromer. The cone of percussion is frequently, though not always, imperfectly developed in flakes made by water-abrasion, as is seen in these two instances, Figs. 4 and 5.

Fig. 5*a*.—Outer face of the same, showing facets.

Fig. 6.—Eolith from the Chalk Plateau of Kent showing a notch on either side. There is a slight ridge running up in the centre of the notch on the left-hand side. This is highly characteristic of the effects of pressure-chipping, and is seen also in Figs. 3, 8, and 9, and in some of the slighter notches in Figs. 10, 11, and 12.

Fig. 7.—Experimental imitation of eolith of the simple notched type, made, by pressure against another stone, at the meeting of the Anthropological Institute on December 19, 1905, when the paper was read. In this, as in some other instances, the flaking is at too high an angle to be fully seen in the figure.

Fig. 8.—Another example of the simple notch. Cart-wheel flaking on a new road.

Fig. 9.—Example with three notches; also cart-wheel flaking.

Fig. 10.—This shows two notches meeting at a point, with other chipping on the edge. Cart-wheel flaking.

Fig. 11.—Similar, but larger example. Cart-wheel flaking.

Fig. 12.—Type with longer point. Cart-wheel flaking.

Fig. 13.—A small example of the double-notch with point; each notch in this specimen was made by a single stamp with the heel, the flint being placed on the ground with its edge upon another stone.[1]

Fig. 14.—Neolithic flake from Kent with pressure-chipped edges meeting at a point. This edge-chipping does not bear the impress of designed flaking; neither could it be affirmed to be due to artificial wear.

Fig. 15.—Outer face of a flake from the Palæolithic drift on High Down, in the Isle of Wight. The inner face is striated, while the outer face shows several pressure-clipped notches at different parts of the edge. Some of the striations can be seen passing off at the edge just where the notches are; there can be no reasonable doubt but that the force which made the striations on the surface also made the notches at the edge.

Figs. 16 and 16*a*.—Drill-like form, with reverse chipping; that is with two notches, made from either side, and meeting at a point. Each notch was made by a single stamp with the heel against another stone.

Fig. 17.—Imitation eolith with parallel edge-chipping, made, by pressure, at the meeting when the paper was read.

Fig. 17*a*.—Side view of the same.

Fig. 18.—An example of a different type. Cart-wheel flaking on a new road.

Fig. 19.—Ochreous palæolithic flake from the High Down drift in the Isle of Wight, showing the striations on its surface.

Fig. 20.—This shows the striations on the surface of one square inch of another palæolithic flake from the same hill-drift. Natural size.

All the figures, except Fig. 20, are one-half natural size.

Note.—In my article in *Man* (1905, 103) I gave references to previous suggestions that had been made, particularly by Mr. Wm. Cunnington and Professor T. McKenny Hughes, upon the accidental chipping of flint. I have now come across, in the *Revue de l'École d'Anthrop. de Paris* (tome xi; 1901; p. 151), a short reference to some experiments made by M. L. Capitan, but it is unfortunately too late to introduce any reference to them in the body of the paper.

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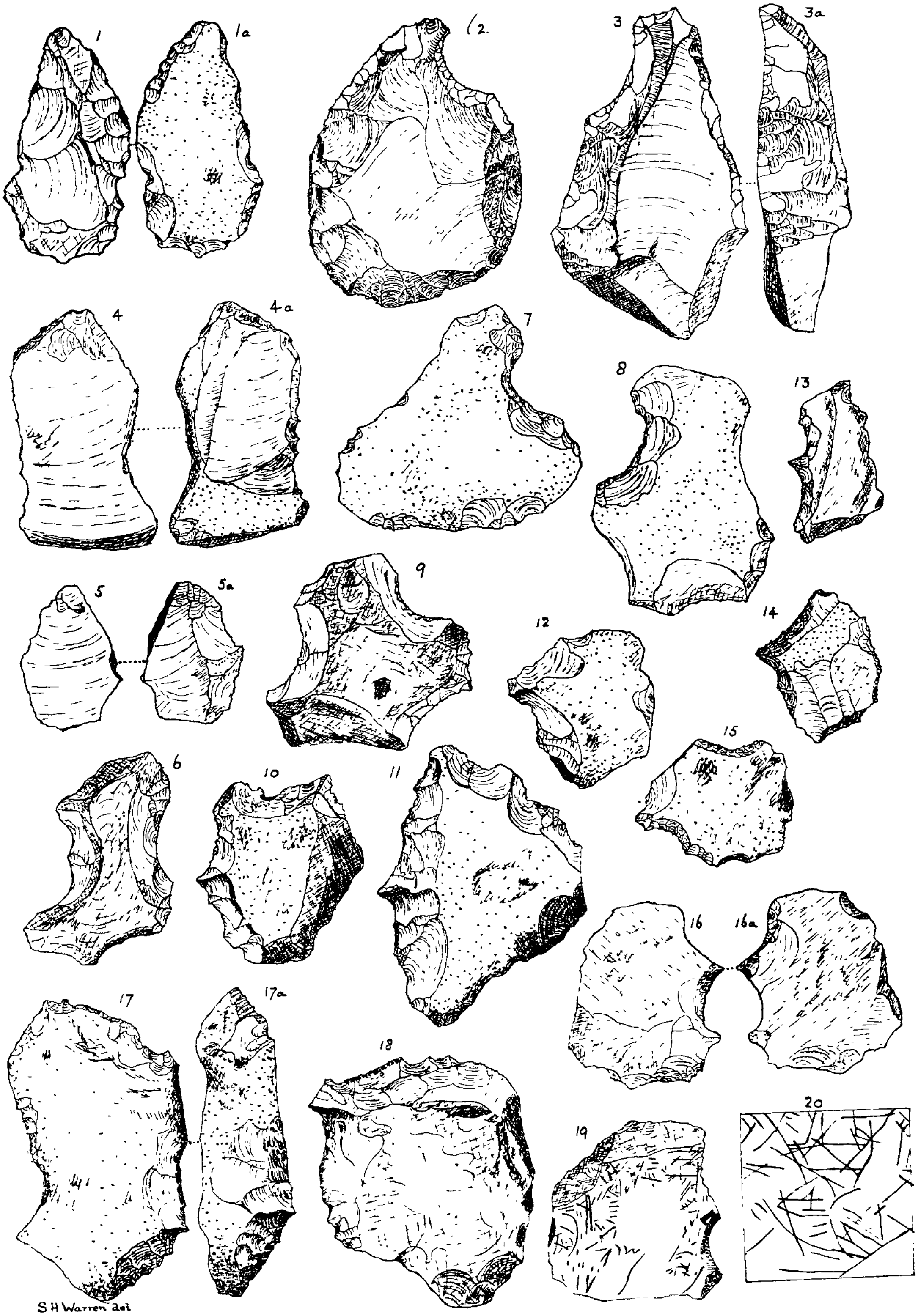
[1] By pressure against two pebbles, instead of against one, the same effect may be produced equally well at a single operation.

Journal of the Anthropological Institute, Vol. XXXV, 1905, *Plate XXVI.*



THE ORIGIN OF "EOLITHIC" FLINTS BY NATURAL CAUSES.

THE BAWENDA: A SKETCH OF THEIR HISTORY AND CUSTOMS.

BY THE REV. E. GOTTSCHLING.

[WITH PLATE XXVII.]

A. *Name.*—That part of the Bantu race of which I have to treat in this paper calls itself *Bawenda,* that is to say, people of Wenda, or inhabitants of Wenda, a country in which they had been living formerly, but the position of which has not yet been ascertained. However, the Bawenda have transferred the name of their native country to their present abode in the north-east corner of the Transvaal, roughly speaking, between the rivers Limpopo and Levuvu.

The Bawenda are called by the Bathonga, *Bapfeša,* and by the Basotho, *Bathsoetla.*

The inhabitants of the Magato country (the western portion of Wenda) are named after an old chief, the Baramapulana, and this name is often mistaken as the name for the whole Bawenda nation.

Very few Europeans know the real name of the Bawenda: either they mix them up with the Basotho, or simply call them "Mountain-Kaffirs," because they live in the precipitous Zoutpansberg mountain range.

B. *The History of the Bawenda.*—The Bawenda, like all Bantu, have no written books, and in consequence very little is known about their history, and up to 1872 they never allowed a missionary or any other European, who could have learned their history from the old people, to settle down amongst them.

However, the tradition and legends as well as the language of the Bawenda prove that they have crossed the interior of Africa in coming down to their present habitation.

The late Rev. C. Beuster, to whose researches I am indebted for most of the information I can give under this heading, and who has been living about thirty years as a missionary amongst the Bawenda, has come to the conclusion that they came originally from the Lower Congo. But a comparison of their language with the languages of the other Bantu in West and East Africa, as well as in the interior, has led me to the opinion that the Bawenda originally came from the great lake regions of Eastern Central Africa.

From their tradition and legends I gather that the Bawenda are a degenerate nation which has seen better times.

According to the tradition of the Bawenda, as explained by the late Rev. C. Beuster, they were led into their present abode, in the beginning of the eighteenth century, by their great king Thoho ea Ndoü = "elephant head," who ruled not only the whole Bawenda nation, but also the Bakalanga in the north, and portions of the Basotho in the south.

The capital of Thoho ea Ndoü is said to have been *Dzada* in Nšelele land. There he erected buildings with the same material as is found in the ruins of Zimbabwe, which, as I am led to believe, was simply taken from these ruins.

The Bakalanga had to carry these stones down from Zimbabwe as part of their tribute to Thoho ea Ndoü. The rule of Thoho ea Ndoü marks the golden era of the Bawenda. They say that he never died, but is still living somewhere hidden in Bokalanga, and that sometime he will come back again to bring them a new time of peace, prosperity and happiness.

All this would tend to intimate that Thoho ea Ndoü was the ruler of the Monomotapa Empire towards the end of its existence, during the latter half of the seventeenth century.

After Thoho ea Ndoü's death the power over the Bakalanga in the north and over the Basotho south of the Mononono or Dwars river was lost for the Bawenda, and the government was divided amongst the three sons of Thoho ea Ndoü. Peace and unanimity, however, could yet be preserved for some time. During the last century the Bawenda country unfortunately has been the scene of frequent disturbances by war both foreign and intestine.

In the beginning of the nineteenth century, the Bapedi, under Tulare, the grandfather of Sekukuni I, invaded the country of the Bawenda, but the mountains secured the victory for the Bawenda. Until this day they call one of their mountains Tšekhundamalema, that is to say, "Conqueror of the Bapedi" (in their language *malema* is the name of the Bapedi and *khunda* means to conquer).

After the Matabele kingdom in Mashonaland had been established by Moselekatse in 1838, they were troubled by the Zulu hordes crossing their country in order to follow the Matabele to Mashonaland. About 1840 a Zulu horde under Ngoana played havoc amongst the Bawenda, and was followed by a strong Zulu force led by Songandawe, but the latter went over the Limpopo and joined Moselekatse. The mountain fortresses again saved the Bawenda from destruction.

But when they were in no danger from invaders, they made war between themselves, especially after the death of a chief. When, about 1859, Chief Mphefo I of south-west Wenda died, Ramavona his son was appointed by him as his successor, but the brother of the latter, Ramapulana, aspired after the authority. He, however, had not enough followers to conquer Ramavona. Ramapulana, in order to gain his object, went to Lydenburg, then an independent republic of the Boers, for assistance, and returned with a Boer force under Commandant H. Potgieter. By their aid Ramapulana became chief of that part of the Bawenda country, at present know as Magatoland.

Ramapulana, in order to make sure of his chieftainship, had his brother Ramavona strangled. This is the manner of removing dangerous princes among the Bawenda, for the blood of princes must not be shed. However, Ramapulana did not long enjoy his power, because the Boers remained near his residence Dzanane, and founded the village of Schoemansdaal. They soon found that Ramapulana proved ungrateful for their assistance. In order to avoid the Boers, Ramapulana appointed his son Davana as prince regent, and fled to Tšewase, the grandfather of the present chief of that country.

When Ramapulana died, his people suspected Davana of having killed his father, and chose his younger brother, the well-known Magato, as their chief, pretending it had been the last wish of the dying Ramapulana. Magato gained the recognition of the Boers by certain promises. Davana fled into the country of Pafuli.

Magato thus owed his chieftainship to the Boers, like his father, but did not mean to keep his promises, intending to break them as soon as possible. In 1867 he succeeded in destroying Schoemansdaal, and freed himself from the power of the Transvaal Republic.

In September, 1895, Magato died, and his son Maëmo was made chief, but he was not able to stand against his elder brother Mphefo, who ruled the Bawenda of Magatoland until 1899, when the late General Joubert with a strong force conquered Magatoland, and Mphefo, with part of his followers, crossed the Limpopo and fled into Mashonaland. Over the remainder of the Magato tribe Senthumule was appointed chief. Ramapulana is said to have been a direct descendant of the great Thoho ea Ndoü.

Towards the north-east of Magatoland we find the second Bawenda kingdom, the country of Tševase, who is also a direct descendant of Thoho ea Ndoü. Old Tševase was a very prudent man, who always minded his own business and did not allow himself to be misled by Magato to assist him in his warfare against the Transvaal Republic. As a reward for his prudence he retained his independence during his life.

Still further to the north-east is the third great Bawenda kingdom, that of Pafuli, with the well-known Makoarela as its present chief or Pafuli. As the kings of Egypt of old were invariably called Pharaoh, so the chiefs of the three great Bawenda kingdoms are called Ramapulana (or Makato), Tševase and Pafuli respectively, whatever their personal name may be. The same is the case with the smaller chiefs, Rambuda, Motele, Matzebandela and others.

Those desirous to know more about the history of the Bawenda are recommended to read W. Gründler, *Geschichte der Bawenda Mission in Nord Transvaal*,[1] in which the reports of the late Rev. C. Beuster have been published.

C. *The Nationality of the Bawenda.*—The Bawenda are one of the numerous Bantu nations, showing every sign of a separate tribe. They are distinguished markedly from all the Bantu tribes, the Bakalanga in the north, the Magwamba in the east, the Basotho in the south and the Bethšuana in the west of their present country, in appearance, in their customs and habits of life, and especially in their language.

Their appearance shows at once that they belong to the interior tribes and that their blood has been mixed with that of Asiatics. The custom of circumcision was not practised by them originally, but they are adopting it now. Their habits of life are also different, but the greatest difference is shown in the language—in the vocabulary as well as in the grammar—and proves that the Bawenda are a distinct tribe of the great Bantu family.

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[1] Berlin N.O. 43. *Buchhandlung der Berliner Evang. Mission's Gesellschaft:* Georgenkirch Strasse, 70.

I. Appearance.

The Bawenda, with few exceptions, are of a medium stature; their complexion varies from a dull dark-brown to a fair reddish-brown. Their appearance shows the well-known characteristics of the Bantu of Eastern Central Africa, with a strain of Asiatic blood as a proof that they did not originally come from the Lower Congo, but from the lake regions.

II. Character.

This shows all the weakness of that of the Bantu of the interior; but they are known specially for their courtesy and politeness, and they have also a very strong sense of justice and honesty.

III. Habits of Life.

(*a*) *Dwellings* are constructed of poles planted one by one in a circle, covered by thatched roofs, which are sometimes little masterpieces of wickerwork. The poles are plastered nicely with clay inside and outside, and the lower part of the wall is painted with simple designs. As paint, different coloured clays are used. Wall and floor are made by the women.

As building sites, the wooded slopes or even the highest tops of the mountains are chosen by preference. The "kraals" of the Bawenda are mostly very small; kraals of a hundred huts are rare. The huts of the chief occupy the highest terrace in the kraal.

The huts are scattered about irregularly, and the different yards can only be reached by quite a labyrinth of narrow footpaths and gates.

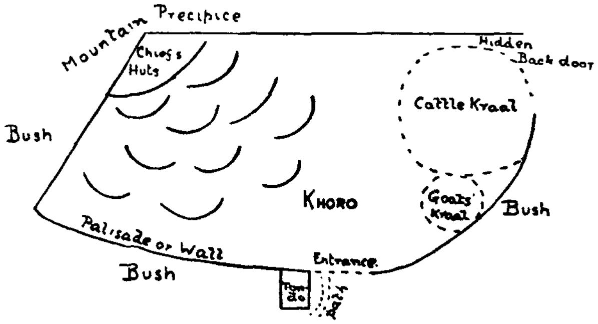

Fig. 1.—Sketch plan of Kraal.

The whole kraal is hidden in the bush, so that a stranger will pass by unconscious of the fact that there is a native village near. Often long winding narrow footpaths are kept open only by the support of a single pole here and there; they are so narrow and low that it is a very difficult task to bring a horse into such a village. In times of war the poles are taken away and the thorny creepers allowed to fall down, and thus form a natural bulwark against the enemy, who can neither enter the kraal through the thicket nor destroy it by fire. The Bawenda kraals in the mountains are, moreover, often protected by walls of from 6 feet to 8 feet in height, by which they are surrounded and subdivided. The walls are from 4 feet to 6 feet thick at the base and from 2 feet to 3 feet at the top. A double wall of raw undressed stones is built, without mortar, but the space between the two sides of the wall is filled up with dry soil.

The narrow entrance to the village is closed every night with strong and heavy poles standing almost upright and kept in position by a framework of poles. In daytime only a few of the gate poles are put aside, scarcely enough to allow a woman with a pot of water on her head to pass through.

In order that the kraal may be better hidden from the view of the enemy, the tops of the walls surrounding and subdividing the kraals are sown with Indian corn or Kaffir corn, or planted with tobacco. Travellers through the country very seldom come across a Bawenda kraal. To see where the Bawenda dwell, it is necessary to climb to the tops of mountains, then the roofs of their huts can be seen peeping out of the surrounding green like clusters of mushrooms in the woods.

Near the entrance to chiefs' kraals an oblong fortress-like walled enclosure is to be found, which is the school for the young men, and is called "Tondo." In times of unrest this *tondo* serves as watch-house for the town guard.

(*b*) *Food and drink, etc.*—The Bawenda are very particular about their food. Although in time of want they will eat anything that grows in the country in the shape of grain, fruit or roots, or anything living in their woods, flying in the air or creeping on their trees—as, for instance, even locusts and caterpillars—they prefer above everything Indian corn, which they know how to prepare for food in many different ways. As a rule the grain of the Indian corn is crushed by the women in wooden mortars, with pestles of a very hard and heavy wood, into such a fine flour that it is equal to the finest flour of wheat. From this maize flour they cook a very delicious paste, which, however, is not presented for food in unsightly lumps, but by very skilful handling with a large wooden basting ladle is formed into long thin cakes, which are very accurately arranged in nice piles on very clean wooden dishes.

If they have neither meat nor milk to eat with these cakes (called *Mekonde*), they prepare from many herbs growing in the bush, field or garden, different kinds of sauces, sometimes mixed with crushed monkey-nuts, of which also they are very fond. They know how to prepare salt from the ashes of certain herbs which they burn for that purpose.

The Bawenda drink different kinds of home-brewed beer, milk, tea from a wild growing plant, also coffee which they have learned from our missionaries to grow in their own gardens. Besides that they are very fond of chewing sugar-cane and tobacco, and of smoking and snuffing. Unfortunately they have also become partly accustomed to smoking *dacha* (hemp).

(*c*) *Clothing.*—In their original state they wore very little in the shape of clothing, which differed greatly from that worn by the Magwamba, and more resembled that of the Bakalanga and North Basotho.

By the influence of our missionaries the Bawenda of to-day have been taking largely to the use of European clothing and dress stuffs.

(*d*) *Sleeping.*—The huts are used mostly for sleeping in. A smouldering fire is kept burning all night in the centre. Mats are spread on the floor, on which the members of the family lie with their feet towards the fire; their heads rest on thick wooden rollers near the wall.

(*e*) *Agriculture and Husbandry.*—The Bawenda are very diligent agriculturists, and, wherever possible, leave no sod unturned in order to make gardens, to plant their maize, red and white kaffir corn, sweet potatoes, groundnuts, beans, *mofoho*, sweet cane, water-melon, pumpkin, calabash, tobacco, etc. They will plant their corn even on the steepest mountain slopes and in the narrowest crevices between the rocks. In their desire to cultivate the ground they, unfortunately, cut down many acres of very old and valuable wood which ought to be preserved for better purposes.

Their husbandry has unhappily been very much reduced by the "rinderpest" and the Rhodesian redwater. Few cattle have been left in the country. Horse sickness leaves very few horses and mules alive. Donkeys thrive pretty well. Sheep, goats and pigs are kept, also fowls.

(*f*) *Pastimes.*—Amongst the favourite pastimes of the Bawenda is the music of their various home-made but very primitive instruments, and the dance.

The men can occupy themselves for hours and hours with the game of *Mofuva*, a kind of chess. The *mofuva* board consists of the trunk of a tree which has been flattened sufficiently to allow of four rows of square holes to be hewn in it, with at least twenty-eight holes in each row. The ends of the board are nicely carved in spiral form. Small pebbles or fruit stones are used to play with.

The little boys play at hunting or at war. Out of potter's clay they form all sorts of figures, people as well as animals. They make little musical instruments or build toy vehicles with which to amuse themselves. (Plate XXX, Fig. 1.) They also play several ball games, the bulbs of wild plants serving as balls.

The little girls imitate in play the household duties of their mothers, which very soon will fall to their lot in earnest, or a group of them sits around a small hole made in the ground playing the game of "Ndode" with thirty little pebbles or fruit-pips.

(*g*) *Their Trades.*—The men prepare tobacco for smoking and snuffing; they tan and curry skins, make carosses, plait mats and bags, make corn-baskets, carve walking-sticks, spoons, chairs, head-rests, basins and dishes. They also make weapons and musical instruments.

Before there were any European traders amongst them they smelted iron and copper ore and made their own hoes, battle-axes, assegais and arrow-points from metal of their own smelting. They know how to make gunpowder and to cast bullets from lead. They make sandals, fur-caps and other things required by them.

The women sometimes are very able potters.

(*h*) *War.*—Until very recently the chiefs of the Bawenda settled their political differences quite independently by war, by invasions with murderous surprises of the enemy during the night or in the early morning, by incendiarism, pillaging or waylaying. Many a single enemy has been surprised and assassinated or deceitfully poisoned in order to get rid of him. The victory was celebrated by a dance of the victors over the dead bodies of the enemy, and parts of their flesh were mixed with beef and eaten by the heroes of the day.

IV. *Curriculum Vitæ.*

The *curriculum vitæ* of the heathen Bawenda is a long succession of fear, superstition, suppression and misery. From birth to death they are haunted by their gods, by the ghosts of their ancestors, by all sorts of hobgoblins, and tremble with fear of their witchdoctors and chiefs.

1. *Birth.*—When a child's birth is expected, the witchdoctor is called and has to give medicine to the mother to give her power to nurse the child (*o nea damo*). As soon as the child is born the witchdoctor has to come again to protect both mother and child by his medicine and sorcery. The place where the child has been born and where it is laid down in the hut is surrounded with little sticks which, through the power of sorcery, act as charms and keep the demons away so that they may not do any harm to the child. The mother has to remain three days in this hut, the new-born child one month. When the child is four days old the witchdoctor (Ṅanga) comes again, *o thusa moana,* to give the child the name which has been chosen by the mother. With a little sharp instrument the Ṅanga makes little cuts on the child's body and its extremities till the blood comes, and rubs some medicine in them to make the child strong and lusty. A few days later the Ṅanga turns up again to tie a fetish (*tšetungulo*) round the child's neck, arms, ankle or waist; a sacrifice is also brought for the child (*ndi tšedzimo tšamaine*), which is in fact nothing else but the witchdoctor's payment.

In every case of illness the Ṅanga has to prepare some new fetish, and sacrifices are offered again for the child. After one month has passed by, since the birth of the child, the Ṅanga brings again some medicine with which to anoint the child, after which procedure it may be brought outside the hut (*O bwisa moana nga mošonga*) (to bring the child outside by medicine).

At the age of five years, the Ṅanga comes again to wean the child from the mother (*o lomola*), when he gives it medicine to forget the mother's breast.

Father and mother are also anointed with some medicine; this is called *o ola.* If twins are born they are killed, for if they were left alive it would bring a calamity upon the whole country, according to their opinion.

2. *Education.*—Very few attempts are made at education during childhood. The little boys are sent out to look after the goats and sheep ; the bigger ones have to take care of the cattle. They assist also in the agricultural work of the season. The little girls help their mothers in gathering fuel, carrying water, preparing food, weeding the gardens and in harvesting.

The intellectual education is altogether chance-work. When sitting round the fire at night the children hear from the tales of the grown-up people what they think of God, mankind and creation, and they listen as eagerly to these tales as any European child to the fairy tales of its grandmother; and at the times of sacrifice and sorcery on the part of the witchdoctor, the children see and learn all the superstitious doings of their parents.

The official training of youth is left until they enter manhood.

The Bawenda, as stated before, have not the custom of circumcision, but they send their boys into the school called "Tondo," already mentioned as part of the chief's kraal, where they are made men and used as a bodyguard of the chief. The oldest of the chief's councillors act as teachers or instructors.

In the "Tondo" stands a little round shed in which all the fetishes of the tribe are kept, together with a wood-carved image of their "totem" (sacred animal) and of a man and a woman of about two feet in height, fairly well carved in ebony. These figures are called "votambo" (feast).

The young people in the Tondo are shown all these sacred things of the tribe and acquainted with their meaning and use, which, however, they are forbidden under heavy penalty to disclose to any outsiders. No stranger is allowed to profane the Tondo by entering it, and only by the indiscretion of a chief was it possible to learn the above facts.

The pupils of the Tondo are also taught the full range of etiquette in their intercourse with their superiors and chiefs. They are taught to be brave in war, cunning in stealing, and true to their special form of heathenism, *i.e.*, to their ancestors. They are taught to bear pain without showing it, and are thus practised in self-restraint. Those who have undergone the discipline of the *Tondo* in the same year form a special brotherhood (*Morole*), and will not betray one another nor give evidence against each other.

When the whole course of the Tondo is finished, the youngsters are declared full-grown men.

The girls are not sent into this Tondo. They receive their schooling from some old woman of rank on the banks of a river. They are driven into deep water and kept there during the pleasure of the instructress, however cold it may be, till everything is done according to their particular rites. This bringing the girls in the water, etc., as a declaration of puberty, is called *Voša.*

One year's class of such girls, now declared to be grown-up persons, also form a special club, called likewise *Morole.*

3. *Declaration of Manhood and Puberty.*—The whole act of making boys and girls grown-up people consists of three parts. What I have said about the *Tondo* and the *Voša* constitutes the first part.

The second part is a separate dance of both sexes in daytime called *domba.* The images of the man and woman, mentioned before, together with the "totem" (?), are put in the centre of the dancing parties as they move about.

The third part of this heathen confirmation is a dance of both sexes together at night called *hali*, which does not bear description. The young people are now full-grown adults and confirmed heathen Bawenda.[1]

4. *Engagement and Marriage.*—The engagement of the Bawenda is a very ceremonious affair, if not performed when the girl is yet a little child, as is unfortunately often the case. Sometimes the child is even promised conditionally before it is born.

If a young man has seen a girl whom he would like to become his wife, he chooses his *malidzila* (matchmaker), and sends him to the father of the girl to make the necessary preliminaries for the engagement. If the would-be bridegroom is considered a welcome son-in-law, the father of the girl elects his middleman called *makhade*. These two middlemen, the *malidzila* and the *makhade*, have to mediate between the parties. The uppermost question to be settled is that of the number of cattle to be handed over to the girl's father by the bridegroom. With the payment of the first instalment the engagement is considered complete.

The girl's wishes are of no moment in the matter. The two middlemen are the legal witnesses of the engagement and the subsequent marriage. The bridegroom hands the cattle over to the *malidzila*, from whom it is received by the *makhade*, who in his turn hands it over to the girl's father. To avoid any future dispute, both representatives keep account of the cattle delivered by tying knots in a string, which is kept by them as a record of the transaction.

If the parties have agreed upon the time of the celebration of the marriage a farewell feast is given, accompanied by beer-drinking, at the kraal of the girl's father. The witchdoctor foretells the future of the bride by means of his dice; he anoints her from head to foot with a charm, he bewitches her ornaments and puts them on her, and last, but not least, he fixes some new powerful talisman on her necklace or girdle, or both.

The farewell *fête* being over, the bride is conducted in solemn procession to her husband's kraal, where she is led by the girl-friends of her father's and her husband's kraal into her hut and smeared with red clay. For the first five days she has to remain in her hut. The sixth day she has to go to the river to take a bath and for the first time to fetch water for her husband and to cook his food. The following night is celebrated by a great dance and beer-drinking, in which, however, the young bride has no share.

Not until the first night of the third month after the marriage is the husband allowed to enter his wife's hut.

No festivity takes place if a man gives one of his wives to a friend, or in the case of a childless widow being taken over as wife by her deceased husband's brother (*levirate*), for in both cases any child born belongs legally to the first husband of the woman.

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[1] For the customs of the Initiation Ceremonies of the other Bantu, see A. Kropf, D.D., Berlin Mission Buchhandlung, Berlin N.O. 43, Georgenkirch Strasse 70.

5. *Family Life.*—As long as the Mowenda has but one wife who presents him with children, his family life may be a very happy one, but not if she should remain childless. But as the Bawenda are polygamists, and wives to them mean wealth, the Mowenda takes as many wives as he can possibly afford. Then the husband has to live by turns with his wives, who have each their separate house, and a good deal of rivalry takes place among them, which makes happiness an impossibility.

Should a man take a wife who is disliked by the others, they will soon make it very unpleasant for her, neglect her in childbed, or even poison her in order to get rid of her.

6. *Daily Routine of Work, Meals, and Pleasures.*—The Bawenda are very busy people, but unfortunately too much time and power is wasted by reason of the insufficiency of their tools for preparing food and for doing their household and agricultural work.

If one happens to sleep in a Bawenda kraal one is disturbed in one's deepest slumber between one and two o'clock at night by thundering sounds, which set the ground of the whole kraal quaking and make one think at the first moment of an earthquake. But this thundering and rumbling noise comes from the wooden pestles (*mese*; singular, *mose*), thrust by the women into their wooden mortars (*methuli*; singular, *mothuli*), which are filled with maize, to be crushed into the finest flour. Under the circumstances it is impossible to sleep any longer. The Bawenda men, however, try their best to sleep a few hours longer, but the noise gets too much even for them, so that they prefer to get up between four and five o'clock to sit round the fire smoking their beloved tobacco and talking in a low tone over any matter of interest.

About six o'clock the girls turn out to fetch water from the far fountain. Soon after, the men take some work in hand near the fire, preparing skins, cutting thongs, making sandals, sewing carosses, cleaning grass for thatching, preparing cords and ropes from bark or rushes for building purposes, etc.

At eight o'clock men commence milking the cows and goats, and the women begin to cook the food for the first meal (*tšezṳtulo*), which is taken at ten o'clock.

At half-past ten all set to work properly, either in building or in ploughing, or whatever the work of the season may be. At eleven o'clock the children let the cattle, goats, and sheep out of their kraals and drive them to their pastures.

At four o'clock p.m. those women and girls who have to provide the supper (*tšelalelo*) return to the kraal and first of all go in order to fetch water and then do their cooking. If no fuel is near, some of the women and children during the day have been out to the bush to gather dry wood, sufficient to cook the supper and to keep the fire alight during the evening, leaving some for the next morning.

Soon after sunset all the rest of the young people return with their charges to their kraals, the gate is closed for the night, the cattle milked, and the supper taken.

The chief dines first, then his indunas and men in succession according to their rank and dignity.

A woman kneels near the men to serve them by pouring water over their hands before they touch the food and by handing and holding for them the dishes. All the time the woman looks away from the men, either to the other side or to the ground. When the men have finished their meal it is the turn of the women and children to eat.

Meantime the men gather round the fire smoking and telling stories. Later on the musicians sound their instruments and the young people begin a dance. A deafening concert of very melancholy tunes, as far as the instrumental music is concerned, is kept up till near midnight, when at last quiet and rest return to the kraal for scarcely a couple of hours.

This is the ordinary routine of Bawenda life, which is only altered a little during the times of festivities in favour of beer-drinking, music and dance.

7. *Illness, Death and Burial.*—However, life is not so happy with the Bawenda as their shouts of joy would make us believe, for their beer-drinkings only too often end in murderous quarrels, and their seeming pleasure in misery.

But besides this they are always in danger of witchdoctors, *valoi* and all sorts of evil spirits. There is no case of illness, or death, or any evil spirit, but some living person must be the cause of it by some sort of witchcraft. The family of the sick or dead set the witchdoctors at work to find out the evil spirit, the sorcerer or the *moloi* who has caused the illness or the death to be investigated.

In such case nobody is safe, but anyone may be declared a sorcerer or a *moloi*, especially if someone of high rank has a spite against him, or if he is a wealthy man.

All sorts of illness threaten the Bawenda, including the malaria called *dali* or *tšetetcmelo*, the measles (*tšefumba*), smallpox (*thomba*), consumption (*lofehe*), leprosy (*mapele*), syphilis (*thusula*). But the most dreaded disease is the *ṅombe*, an illness in which blood oozes out, not only from the mouth, nose and ears, but even through the eyes and the pores of the skin. Those attacked by this dreadful disease are said to die within a few hours.

In any case of illness the witchdoctor is called to find out, by throwing his dice, the cause as well as the cure of the malady.

In spite of all the illness, nobody dies a natural death according to the belief of the Bawenda.

If somebody has died, a great *tšelilo* (lamentation) is raised, which is renewed again and again for a whole month, during which all the relations and friends of the family have to come to *emelela* (to comfort the surviving).

For the funeral an ox is killed, and the dead body tied up in its skin in a sitting posture. If the body has become cold and stiff, knees and elbows are cut by an axe until they can be brought into the desired position. The body is buried during the night under the enclosure of thorn branches which surrounds the cattle kraal, and the grave is covered again by these branches so that nobody can see where the body has been buried. The house of the deceased is burned, and the survivors erect a new dwelling at some distance.

The kings of the Bawenda, however, are buried in the holy wood (*tšefo* or *tšelata*) where their ancestors have been buried before. The death of a king is kept secret as long as possible. Kings do not die (*fa*), but they only go away and hide for some time (*dzama*). In olden times the body of a king was laid on a wooden framework the height of a table and left until the flesh had fallen off, when the skeleton was buried.

D. Their Tribal Constitution.

1. *Royalty.*—The tribal constitution in each chieftainship of the Bawenda is an hereditary monarchy. The descendants of Toho ea Ndoü are the rulers of the different chieftainships. The three great royal families are Ramapulana, *alias* Magato, Tševase and Pafuli, but besides them there is a number of small chiefs who are more or less independent.

As a rule the eldest son of the great wife is the heir to the chieftainship, but sometimes a deviation of this rule is brought about either by the last will of the father or by war amongst the brother pretenders.

2. *Constitutional Limitations of the Chief's Power.*—The power of the chief is limited by the unwritten laws of old custom, and by the council of the *Magota, Nduna* and witchdoctors. No law can be made by the chief unless it has been sanctioned by the councillors above mentioned. However, all the honour of ruling is left strictly to the chief, even although the order or decision given may be altogether against his will.

3. *Taxation.*—Taxation among the Bawenda does not mean a contribution towards the good government of the country for the benefit of the people. It is rather a contribution towards the maintenance of the chief's household and position, either by way of a thank-offering or a fine, as the case may be. The Mowenda dare not eat and he dare not drink unless he has first given his share to the chief.

All the *morula* trees in the country are considered the property of the chief. Therefore all his subjects have to provide his household with *mokumbi,* a kind of beer made of the fruit of that tree. When the maize is ripe, or nearly so, a few cobs have to be brought to the chief. The first beer, which is brewed of the first corn, belongs to him. In case of killing an ox, a goat or a sheep, a leg has to be given to the chief.

If some death has to be reported to the chief, the message must be accompanied by a present; the same is the case if any permission or decision or prayer is asked from the chief.

The chief's subjects have to assist in building and repairing his houses, they have to work his gardens and to assist in harvesting. He receives part of the value recovered by one party from the other, and all the fines paid. The chief takes the greatest share of all confiscated property.

If some subjects have been away to earn money, they have to give to the chief at least one pound on their return. If the chief wants any money besides, he simply makes a collection, and all his subjects have to contribute towards it. So the Bawenda are very heavily taxed by their chiefs.

4. *Division of the Country.*—In order to make sure of their subjects in all parts of their country, the chiefs of the Bawenda have divided it into many small provinces, to which they send their wives or sons or even daughters or sisters to rule in accordance with the will of the paramount chief. Every day and night the Nduna run through the country with messages for the king, and orders for the governors in all the provinces. The paramount chief often travels himself to see whether his intentions are carried out. The more near relations the chief has to send as his governors to the several parts of his country, the stronger will be his power, and the safer his authority and kingdom.

E. Administration of Justice.

1. *Courts of Justice.*—The courts of justice are constituted by the chief and his Nduna. Every petty chief with his councillors forms the lower court for his province. The paramount chief, with some of his councillors, forms the circuit court, together with the petty chief and Nduna of the province. The high court consists of the paramount chief, some of the elder petty chiefs, and the great councillors of the whole country.

2. *Proceedings in Court.*—Criminal as well as civil cases are settled. Unfortunately the criminal cases are only too often brought before the court out of spite and covetousness. Civil cases are open to bribery. Any case laid before the chief has to be accompanied with a present, in order to find a hearing. This present is given *o wula khoro* (to open the gate). When the matter has been settled, the one who wins the case has to thank the chief again with a present, *o walela khoro* (to shut the gate). Much time and rhetoric are wasted during the proceedings, and witnesses are heard for both sides of the case. The chief discusses the pros and cons with his Nduna, and at last pronounces the verdict. The proceedings are carried on in the open air, where everybody can hear what is going on.

3. *Punishments.*—The punishments inflicted are of all possible kinds, from a mere admonition to the capital penalty:—Restitution, fines, beating, imprisonment, forfeiture of all property (eating up), and banishment. Capital punishment was carried out mostly by throwing the delinquent down a steep precipice, by beating him to death with kerries or, in case of members of a royal family, by strangling.

4. *Some peculiar Laws.*—If two persons have been accused to be *valoi* of having caused the death of somebody, and it cannot be decided in the ordinary way who the *moloi* is, they are given a special strong poisonous drink. The one of the two

who gets drunk is the *moloi*, and is punished accordingly, by being beaten to death with kerries.

A very effective law is the following:—If a debtor does not pay his creditor, the latter will take anything of the same value as the debt, say a cow, from anybody who is living in the same kraal as the debtor. The owner of the cow misses it, and searching, finds his cow at the cattle kraal of a stranger. He goes and asks the reason why his cow has been brought there. The creditor tells him the name of his debtor, and informs the owner of the cow, who is only an inhabitant of the debtor's kraal, that the cow will be kept impounded by him until the debtor has paid his account. The owner of the cow is bound by Bawenda law to leave it in the hands of the stranger until the debt has been paid. Consequently, if he wishes to have his cow back, the only way for him to get it is to force the debtor to pay his creditor. This is called by the Bawenda *molaeo oa o farela*—the law of "tit for tat."

F. RELIGIOUS CUSTOMS.

I. *Their Gods.*—The Bawenda have a dim idea of a Creator of the world, whom they call Kosane, and who, according to their saying, has left his footprint on a rock near the Levuvu river, in Lambanes country, when he went away and left the ruling of the world in the hands of Ralowimba, who is also the rewarder of good and the punisher of evil. Ralowimba is feared very much, because he is constantly watching the evil deeds of the people, in order to punish them. If they disturb the soil in a place of which the Ralowimba disapproves, it means ill-fortune to them; the same is the case if they intercept the free current of the air.

When Ralowimba is angry with anybody, he is heard rumbling underground or roaring in the air. His fire is to be seen in the bush, and his voice is to be heard in the mountains. Any fortune that comes to the Bawenda is sent as a reward from Ralowimba, and every misfortune that befalls them is a punishment sent by him. All this reminds one of the Chinese story about their dragon.

The Bawenda have, besides Kosane and Ralowimba, a third deity whom they call Thovela. Thovela is very favourably inclined towards mankind, and is, as it were, the mediator between God and man.

Thovela is the protector of the unborn child, and of the pregnant woman, also of the stranger and visitor who is travelling through the country.

Besides Kosane, Ralowimba, and Thovela, the Bawenda have their nameless Modzimo (God), which is nothing else but the totality of the good souls of their ancestors, who have not been *valoi*, with the founder of their tribe as head, and the ruling chief as living representative. Besides this *Modzimo*, of which the plural is *Vadzimo*, meaning the single souls of their ancestors, they also have

Medzimo, another plural of *Modzimo,* which denotes the many objects on earth which have been made the visible representative of the ancestors of each clan and family.

These *Medzimo,* into which sometimes the *Vadzimo* return, are either cattle, goats, sheep, or weapons and tools of old dead ancestors, as for instance a *dzembe* (kaffir-hoe), a *pfumo* (assegai), a *tzanga* (war-axe), a *mbado* (axe) and other tools. Even shrubs, flowers, or rushes may be created *Medzimo.*

II. *The Priests and Witchdoctors.*—The head of each clan or family chooses his *Tšefi,* priest, who however does duty only once a year at the annual sacrifices at the beginning of harvest. All other sacrifices are carried out by the *Ṅanga*—doctors. The *Tšefi* speaks with the gods and brings their answers to mankind. The *Tšefi* would appear to be the chief priest as it were. However, with the chiefs of the Bawenda, this *Tšefi* is a woman, the eldest sister or nearest female relative of the late chief. With others, the *Tšefi* is a man.

The witchdoctors (*Dzi-Ṅanga*) who usually act also as priests, are, among the Bawenda, of the following different kinds:—

1. *Monei oa mbwula*—giver of rain.
2. *Maine lofali*—the finder of the *Valoi.*
3. *Maine oa Mošōnga*—the medicine-doctor.
4. *Maine oa o funga*—who consecrates weapons, and makes the soldiers invulnerable.
5. *Mobwumbi*—a woman who foretells fortune or misfortune by a rattle consisting of a kalabash with stones put inside.
6. *Ṅanga ea o lumula*—who sucks illness out of the body, by taking beforehand something in his mouth, which he afterwards shows as the cause of the illness.
7. *Ṅanga ea tšepengo* cures the madmen. He kills a black sheep, boils the lungs, puts his medicine in a piece, and gives it to the sick.
8. *Ṅanga ea Tšele* (*tšele* is a kind of rattle). He cures the sick by dancing during the night.
9. *Tšefi,* mentioned above.

All the causes of misfortune, illness and death are, as a rule, found out by the *Ṅanga* by throwing the dice—*o tungula dzi tangu*—which is the speciality of the *Maine lofali.*

If after the death of someone the *Moloi* is to be sought for, the *Maine lofali* puts a basin containing water before him on the ground. The different families of the clan are congregated about the doctor, forming a circle; the heads of the families are the inner circle, their families being behind them according to their rank. When all have settled down, the witchdoctor throws the dice and, together with them, a little piece of wood into the water in the basin. When the contents of the basin have become perfectly quiet the *Moloi* is shown to be among the members of that family in front of which the little piece of wood remains at rest.

After that the members of that family are arranged around the basin and the procedure with the dice repeated.[1]

III. *Their Places of Worship.*—These are the graves of the old chiefs and ancestors in the holy groves. As a rule, however, the holy places in the kraals are used as the place of prayer and sacrifice. The altar consists of three stones fixed in the ground, in the centre of which a shrub, flower (*Lohome*) or rush has been planted.

IV. *Their Sacrifices and Prayers.*—The kind of sacrifice to be brought is decided by the *Ṅanga*. In olden times human sacrifices were allowed, but nowadays only the black sheep, goat or ox is used and all kinds of food, little bits of hide and beer. In all special cases the kind of sacrifice and the place where it has to be brought is announced by the priest-doctor. At the two annual sacrifices, at the time of ploughing and at the great festivity at the beginning of the harvest, the members of the respective families gather round their family altar in the yard of their clan's head. The Modzimo of the family is put on the altar and each member has to throw a little of the new fruit upon it, and to pour some beer over it. In case the *Modzimo* of the family is an ox or other animal, it is forced to swallow some of the beer of the sacrifice.

At the two annual sacrifices every chief wears only the kaross of his ancestor. All the sacrifices of the Bawenda are accompanied with prayers.

In case of sacrifices ordered by witchdoctors, on account of illness or other calamities, they pray their ancestors or the one who the doctor says is troubling them, to go to sleep and not to trouble their surviving family, but to leave them at rest. At the annual sacrifices they pray somewhat to this effect: "O Modzimo, Thou art our father, we Thy children have congregated here; we humbly beg to inform Thee that a new year has commenced. Thou art our God; Thou art our creator; Thou art our keeper. We pray Thee: give us food for us and for our children; give us cattle; give us happiness. Preserve us from illness, pestilence and war. In case of war give us victory over our enemies; give us always prosperity. See, here we bring from what we have harvested. Thou art our father, also our grandfather, grandfather's father and his grandfather," and so on as far as any ancestor is known. After this or a similar prayer, every member of the family offers his sacrifice of the first-fruits and the first beer, and then all are at liberty to harvest and to enjoy the new food and the new beer. These prayers at the sacrifices are never directed to Kosane, Ralowimba or Thovela, but always to the ancestors; but in every-day life they pray to Ralowimba.

We see that there are two elements in the religious customs of the Bawenda. Besides these two, there is also a trace of totemism to be found amongst them—whether with endogamy and exogamy I have not yet been able to ascertain. As far as my information goes at present, it seems not to interfere with the marriage customs.

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[1] Particulars about the dice of the Bawenda are to be found in the *Zeitschrift für Ethnologie*, 1903, pp. 338–378, in the article by the late Dr. Barthel, "Der Würfelzauber der Sudafrikanischen Völker."

V. *Superstitious Customs.*—Besides the witchcraft of the doctors, there are many superstitious customs practised by the common people.

(*a*) For instance, before a Mowenda crosses the Motšindute river near Pipitis, where, according to their saying, the water-spirits live (*Tšedahadžane*), he throws down a branch, a stone, or something else, with the prayer that the *Tšedahadžane* may allow him to cross the river in safety.

(*b*) Old Magato died in Botokoa, but his remains had to be buried in Dzanane, in his country. Wherever his remains stayed for a rest, everybody engaged in the transport threw a stone at the resting place.

The same is done on other occasions, for instance, by a wedding party. Many such heaps of stones are to be found throughout the country.

Tšeaoelo is the name of such a heap that is to say, " resting place." Whenever a travelling Mowenda comes across such a stone-heap he says *Ndi tšeaoelo tša mogede*—" It is the resting place of someone." He increases the heap by one more stone and prays for *bon voyage.*

(*c*) If a Mowenda is working outside, and he feels something like a little drop falling upon him, he says *Vadzimo va pfela mare*—the spirits spit, and in order to make them sleep again he spits on the ground.

(*d*) In case a traveller is afraid that the sun might set before he has reached his destination, he takes a stone and puts it in the bifurcation of a tree, praying thereby *Dova le sa kovele phanda ndo sṳka*—" May the sun not set before I reach my destination."

(*e*) Before sowing their maize or corn, the Bawenda at first pick and sow a little for their ancestors, either in their own garden or in the garden of the head of their family, or in both.

(*f*) In case the maize does not grow well, the witchdoctor is then called ; he throws the dice, prepares a medicine, sprinkles it on the field and the new seed to be sown ; after which he orders the owner of the garden to call all the members of his family to plant the doctored seed into the doctored land ; then it will grow well. This doctoring is called *o eta sonda.*

(*g*) If a boy dies before having touched a woman, a girl is sent after him into Hades to be his wife there. Formerly, it may be, the girl was buried with him, either alive or dead. At present the girl is sent only ceremonially into Hades by the art of the witchdoctor. He prepares by his witchery a pick-handle and some little sticks. The pick-handle (handle of a Kaffir hoe) is planted in the ground at a crossway, the head of it remaining above ground ; two little sticks are planted in front of it and are connected by another little stick with the head of the handle.

G. Knowledge of Nature and Natural Phenomena.

1. *Astronomy.*—It is interesting to see what keen observers of nature the old Bawenda have been. Naturally their observations of the heavens are the scantiest of all their knowledge of nature. They only took notice of those heavenly bodies and phenomena which to them were indications and signs for season and for days and years.

The Bawenda know the so-called "Cape Clouds" as indicators of Spring and Winter, and name them accordingly. The small one they call *Tselimo*—"Spring"—and the large one *Tsefefo*; "Winter" or *Ndala,* hunger, because in winter food is very scarce and hunger has often to be endured on that account.

As indications of time during the night two evening stars are known to them: the one is called *Khombela tšelalelo,* and the other *Gumbila*; also two morning stars, named *Masasa* and *Khohamotšo.*

Other stars noted by the Bawenda are: Orion, called *Makhale*—Rhinoceros; Canopus, called *Nanga*—horn; Acharnar, called *Tšenangana*—the little horn. The seven stars are called *Tšelimela.* The two brightest stars of the Southern Cross, together with the pointers to the cross, are named *Ditutloa,* but the two first-mentioned stars alone are the *Isadzi* and the pointers *Ndona. Molalavungu* is the name for the Milky Way. *Naledzi ea motšila* is the comet. Eclipses of the sun and moon are noticed. To my surprise, nobody seemed to have noticed Sirius.

2. *Reckoning of Time.*—The greatest attention is, of course, paid to the moon, the original time-standard of all the nations. It is a very difficult task to convince a Mowenda that a month has thirty or thirty-one days, and finally he is convinced only that he is to be cheated out of two or three days' wages. Yet their year had only twelve months, which they call *Phando, Lohuli, Tafamohe, Lambamae, Šuduntule, Fulue, Fuloane, Tangule, Kufumedze, Tšemedze, Lara* and *Nyendavosiko,* I believe that the remainder of the year was a time of festivities.

Their week has only six days; this shows that they knew a day of rest during it. There are, however, only names for three days in the week for Sunday, Monday and Saturday, which are called *La phanda, Mosumboluwo* and *Mogivela* respectively.

The great time-standard, the Sun, is observed in nine different positions:—

1. *Kha vosiko.*
2. *Nga matšelone* or *le tši bwa.*
3. *Matavelone* or *le tši tava.*
4. *Lo tava.*
5. *Le ntha toho.*
6. *Lo fera toho.*
7. *Le matabama.*
8. *Le tše fefa.*
9. *Lo kovela.*

The following sketch shows the positions:—

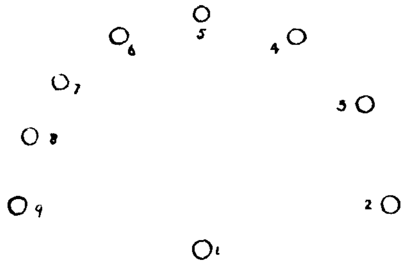

FIG. 2.—POSITIONS OF SUN AS OBSERVED BY BAWENDA.

The Bawenda distinguish four seasons of the year:—

Tšelimo, the time of ploughing and sowing.

Lotavula, the time of the beginning of harvest.

Tšefefo or *Mainda* (autumn), the time after the harvest when they still have food.

Mareha (winter) or *Ndala* (hunger), when food is scarce and they have to remain more or less hungry.

3. *Meteorology.*—The Bawenda notice the falling stars. They have names for the morning twilight *motšo:* and the aurora, *mapfuvi.* The evening-red is called *o tsuka makole. Vosinga-vadzimo*—bow of the gods—is the rainbow. *Ndadzi* is the flash of lightning striking anything. For every kind of rain there is a special name in their language. *Khuli* is the fog; *Khalalu* haze (*Höhenrauch*); *Malimologoana* the *Fata Morgana. Mahada* is the white frost, for which the star Canopus is held responsible. No snow is known, consequently there is no name for it in the language.

4. *Geology, Botany and Zoology, etc.*—The Bawenda are more at home on the surface of the earth than in the heavens and in the air. There is not a single geographical fact of their country but they have given it a name of their own. Even geological features have not evaded their notice, for they have specific names for every kind of soil and also for every sort of stone and rock.

Botany is the great field of the medicine doctor, for he knows all the poisonous plants, but besides that there is not a tree, shrub or plant that has not a name in their language. They distinguish even every kind of grass by a different name.

The Bawenda have names of their own for any living creature found in their country.

This knowledge, of course, is only to be found amongst the old people, whilst it becomes more and more lost among the younger generations.

H. THEIR PROVERBS AND ADAGES.

I am in possession of about six hundred proverbs, of which most have been collected by the late Rev. C. Beuster, to whose diligent researches I am greatly indebted. These proverbs and adages constitute quite a treasury for a psychology of the Bawenda, and they contain a good deal of worldly wisdom and prudence.

The chief subject used in the proverbs is mankind itself in all its stages They refer to the full-grown man and to the child, to the husband and to the wife, to the father and the mother, to the old woman and to the orphan, to the chief and the witchdoctor, to the wealthy and the poor, to the fool and the rogue, to the ruler and the messenger, to the master and the servant, and also to the traveller and the stranger.

Of the animals mentioned in the proverbs, the dog is most frequently used as a lesson to mankind; also the mouse, the elephant, cattle, locusts, the hare, snakes, the goat, the hyena, the civet cat, the antelope, the guinea-fowl, the bavian, the tiger, the crow, the leguan, the chameleon, the hen, the fish, the owl and the weasel. I give them in the order of frequency with which they are used. The lessons given are : to be prudent, to be diligent and careful, to avoid evil-doing, to help the needful, to cry with the one who is crying, to honour the last will of the deceased, and so on.

Much use is made of proverbs in daily life, and if a stranger cites one or other, the Mowenda gets quite excited and finishes it as soon as he has heard only the beginning.

I. The Language.

This shows every characteristic of the Bantu languages of the interior of South Africa. It differs from Kaffir by the want of clicks, and has nothing of the harshness of Sesutho and the other surrounding languages; and although the grammar follows the general rules of the neighbouring Bantu, it has some special features by which it is considerably distinguished. Where in Tšewenda the same words are used, *k* is softened into *ng*, as in *reka—renga*, to buy.

p into *mb*, as in *peu* = *mbeu* = seed, or
„ *mbv*, as in *pula* = *mbvula* = rain.
t „ *nd*, as in *ke* = *ndi* = I.
sh (*s*) „ *s*, as in *šala* = *sala* = to remain behind.
bz „ *z*, as in *bzoala* = *zoala* = to sow.
n „ *l*, as in *namula* = *lamula* = orange.
by „ *h*, as in *bya* = *ha*.
g „ *h*, as in *ga* = *ha*.

A greater difference, however, is shown in some parts of the grammar. For instance, where other languages form the perfect tenses of the verb by attaching the suffix *ile* to the stem, as in *ke a reka* = I buy ; *ke rekile* = I have bought, the Tšewenda leaves the verb in all cases unaltered and expresses the perfect tenses by a change in the preceding personal pronoun: It renders the above as follows :—

ndi a renga = I buy.	*ndo renga* = I have bought.
u a renga = thou buyest.	*uo renga* = thou hast bought.
o a renga = he buys.	*oo renga* = he has bought.
re a renga = we buy.	*ro renga* = we have bought.
ne a renga = you buy.	*no renga* = you have bought.
ba a renga = they buy.	*bo renga* = they have bought.

But the greatest difference of the Tšewenda consists in the use either of the same word in just the opposite meaning, or of quite different words. For instance, the word in Tšewenda meaning water is blood in Sesotho, and the word in the one language meaning to renounce in the other is to follow up, and so on.

In order to show the difference of the Tšewenda from the surrounding languages—Sesotho, Tšetonga and Tšekaranga—I give a list of words in the four languages with the meaning in English:—

English.	*Tšewenda.*	*Tšekaranga.*	*Tšetonga.*	*Sesotho.*
country	*šango*	*nyika*	*tiko*	*naxa.*
river	*molambo*	*rgigi*	*nambo*	*noka.*
to teach	*o funza*	*ko dzidzisa*	*ko dzonda*	*xo ruta.*
the will	*lofuno*	*kuta*	*rerando*	*thato.*
fog	*khuli*	*mote*	*ntsuvi*	*mouane.*
clouds	*makole*	*goti*	*mapapa*	*maru.*
time	*tšefinga*	*tšenambo*	*nkari*	*lebaka.*
blood	*malofa*	*ropa*	*ngadi*	*madi*
father	*khotsi*	*bambo*	*tatana*	*tata.*
stone	*tombo*	*bge*	*ribye*	*lefzika.*
the axe	*mbado*	*sano*	*seloka*	*selepe.*
the door	*woti*	*gone*	*rewandi*	*lemati.*
above	*tadolo*	*kumsoro*	*henla*	*godimo.*
the sun	*dova*	*zoba*	*dzambo*	*letšatši.*
water	*madi*	*murura*	*madi*	*meetsi.*

The great work of reducing the Tšewenda to writing has been done by the late Rev. C. Beuster during his nearly thirty years' stay at Tšeware amongst the Bawenda. If any difficulty arose about how the one or other sound had to be expressed in writing, he asked the advice of Dr. Lepsius, the well-known writer of the standard alphabet. Mr. Beuster collected thousands of words, which unfortunately he never endeavoured to get printed, probably because he had his hands full with the work of providing the Bawenda with the necessary books, of which the first was:—

A spelling book with reading lessons.
A hymn book with an appendix of children's songs.
A catechism.
An extract of the New Testament.
The Gospel and the Epistles of St. John.

Other books were ready for the press or in preparation when this faithful worker was called home.[1]

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[1] For further particulars regarding the language of the Bawenda, I refer those interested in it to *Das Tšivenda, Linguistische Studie,* of C. Meinhoff, Berlin. Missions Buchhandlung, Berlin, N. O. 43, Georgenkirch Str. 70.

K. Geographical Features of the Country.

The Bawenda country is very mountainous, well wooded and abundantly watered by constant rivers. The soil is very fertile and the climate sub-tropical, and partly even tropical, therefore of great value for agriculture and horticulture. The missionaries have planted many kinds of fruit trees at their stations, and found the coffee tree growing at the side of the apple and pear tree, together with the peach, guava, loquat and orange tree, as also the banana, pine-apple and vine, etc.

The country seems to be also of some mineral value, for what minerals the old Bawenda had they got out of their own country, and in latter years prospectors worked throughout the country and applied to the Bawenda chiefs for mining concessions, for which they paid annually considerable amounts.

In the forests there is valuable wood to be found, ebony for instance, and other hard woods. A kind of wild cotton grows there, of which the natives make twine. Some children presented me with a ball of caoutchouc which they had prepared themselves in the bush.

Unfortunately the country is far from any market, and it is only such products as maize and other grain that will stand the transport as far as Pietersburg, and the tobacco grown and prepared by the natives, with which they trade far and wide amongst the Europeans and natives in all directions of their country.

Another drawback is that the country is very unhealthy for Europeans to live in on account of the malaria, and another difficulty is horse sickness, which admits of salted horses only being kept.

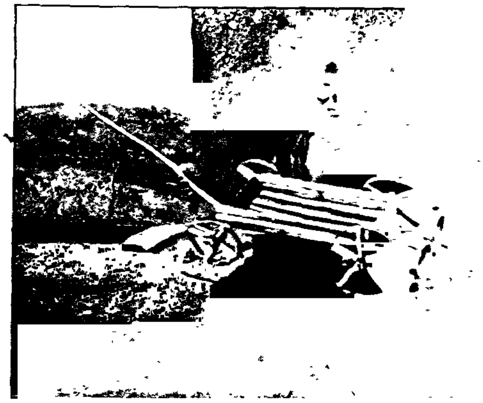

FIG. 1.—MOWENDA BOY WITH TOY WAGON OF HIS OWN MAKE.

FIG. 2.—GIRLS PLAYING.

FIG. 3.—THE LATE CHIEF MATZEBANDELA WITH NDUNA.

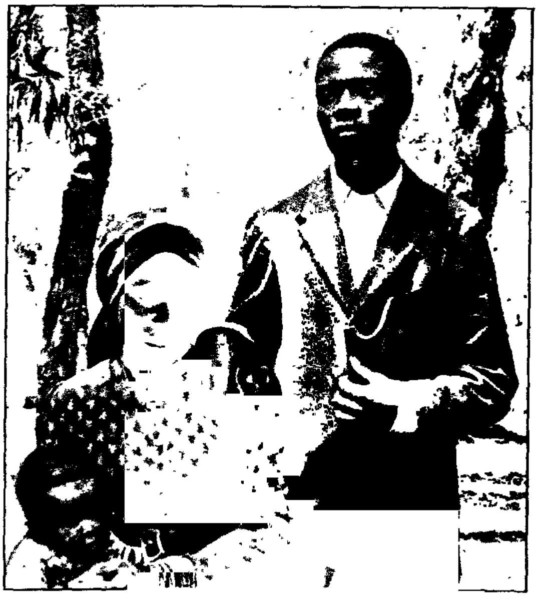

FIG. 4.—A BAWENDA FAMILY.

THE BAWENDA: A SKETCH OF THEIR HISTORY AND CUSTOMS.

NOTES ON A RECENTLY DISCOVERED BRITISH CAMP NEAR WALLINGTON.

BY N. F. ROBARTS.

IN bringing under the notice of the Institute the particulars of a British camp which has hitherto remained entirely unknown, and would have remained undiscovered but for some fortunate building operations, I hope to be able to throw some light upon a question which, as well as being of general interest, will interest local antiquaries, and also give some information upon the arts and customs of the date of the settlement. I have termed it a British camp in accordance with general usage, but *oppidum* or settlement is a more satisfactory description of a place which was evidently residential though fortified by trench, rampart, and probably stockade.

About two years ago I was asked to visit the site of the new buildings now being erected by the Metropolitan Asylums Board at Carshalton-on-the-Hill, to be known as the Southern Hospital, in order to see some geological sections which were being exposed in the course of the excavation of the foundations.

When examining these sections I was informed that some bones had been discovered the previous day in some black earth which had apparently been contained in an old ditch.

On visiting the place, which was situated on the east side of what is now known as "East Isolation Block," I found that the workmen were cutting through some very black soil, in which I detected a fragment of British pottery, which led to my watching the men and seeing several more fragments dug up. I therefore decided to pay further visits to the spot, and eventually I was enabled to get sufficient evidence to prove that a prehistoric settlement had once existed upon the site.

The place is locally known as Stag Field (Ordnance Survey, "Stagg Field"), and lies about a mile south of Carshalton and a little to the west of Oaks Park at Woodcote, and to the east of "Barrow Hedges," a place upon the road from Woodcote to Wallington, where several barrows, which have been recorded, formerly existed. The above road has been supposed to be situated upon the line of an ancient British trackway, and as it runs between the barrows and the camp, which are about half a mile distant from each other, the suggestion that it is an ancient trackway is probably correct.

The exact position of the camp is shown by the station on the Ordnance map, the height 344 feet being the highest point in the camp. The hill upon which the camp is situated is principally formed of an outlier of Thanet sand, and stands almost isolated from the surrounding hills, as may be seen by the 300 feet contour line surrounding it on the map, and possesses, in spite of its moderate elevation, a very extensive view upon all sides, particularly towards the Thames Valley, and was therefore admirably adapted for defensive purposes. The fact of the hill being of sand has been of great advantage in tracing the course of the ditch, as the colour of the earth filling the same makes it easily distinguishable from the surrounding sand. Although situated in what is now known as the Hundred of Croydon, and parochially in the parish of Carshalton, the hundred was formerly known as Wallington Hundred, or originally, in *Domesday,* as Waleton Hundred.

I think I should call attention to what has been written in regard to the present village of Wallington. In their *History of Surrey,* Manning and Bray write: "It is not improbable that Wallington has formerly been a place of much greater importance than its present appearance would induce us to imagine. It gave name to the hundred in which it stands, which though known only by the name of Croydon Hundred in our modern surveys, the late one of Mr. Linley alone excepted, was at the time of the general survey and is still in our county rate books called the Hundred of Wallington—the very name, indeed, implies as much, which is evidently derived from the Roman *vallum.*"

There will, I think, be little dispute that Waleton, the oldest name, is Wall-tun or town, and what is more probable than that it took its name from this British camp situated within a mile of the present village, though no tradition seems to exist of any former settlement.

Roman remains have been found at Beddington to the north-east, and Woodcote to the south, and in view of the disputes which have arisen respecting the site of Noviomagus, which many suppose to have been at or near Woodcote, the presence of this camp almost on the line of the Roman road, which is supposed here to have followed the British trackway, seems to afford considerable evidence of Noviomagus having been probably at or near this camp, if in this neighbourhood at all. It seems to me probable that finding a British camp dominating the road to London the Romans destroyed it and made a station of their own near the place. The remarkable feature about this camp is that it has been completely obliterated, and no tradition attaches to the spot.

The whole surface has been levelled and ploughed, though at present it is meadow land and shows no sign of former arable cultivation. The ditch of the camp and any rampart have absolutely disappeared, and I have been unable to find anything to indicate clearly at what period it was levelled.

I suspect it was in very early times, for the soil filling the upper part of the ditch seems to contain nothing recent, mediæval, or even Roman as far as I can discover. The hill being isolated the soil would not contain much pottery, etc., unless brought on to it with manure for arable land, and as no pathway even exists through the camp there have probably never been any dwellings near it since it was destroyed. The few fragments of Roman pottery found have, I believe, all come from the surface outside the camp, and it will be most interesting if further light can be obtained as to the date at which the levelling took place. The absence of tradition is certainly in favour of its having been levelled at a very remote period.

I must quote one further authority. Thos. Allen, in *A New and Complete History of Surrey,* writes "Noviomagus": "This city was undoubtedly the capital of the Bibroci, and upon a fair collation of the various antiquaries as to its real site it appears to have lain under Woodcote Warren, near old Croydon, at a place now called Wallington, in the parish of Beddington in Surrey. Mr. Dallaway inclines to this opinion from an actual investigation of the Roman road from Regnum to Londinium through the weald of the western division of Sussex and Surrey."

"That Woodcote was a camp or a town there can be no doubt, perhaps it might be the former, the town being at Wallington below."

"Following this idea may not Wallington, Vael-ing-ton, vallum or walled town, in the meadow or plain, be the true site of the city."

So far Thos. Allen.

The "ing" in Wallington may be a corruption, and not "ing" a meadow, as the oldest form is Waleton, but there does seem to be a probability that Allen is right, and that Wallington is the walled town of the Bibroci, and this camp their *oppidum.*

When I first saw the ditch (Fig. 1) the extreme depth was 6 feet, with a width at the top of 12 feet. It was discovered at a most fortunate spot, for nowhere else have I seen it deeper or so well defined. The section was V-shaped, and, as mentioned before, there is no rampart remaining. The bottom of the ditch was a sharp angle. It was filled to the depth of about 12 inches with very black carbonaceous soil, which extended up both faces until within about 2 feet of the surface, coming slightly nearer the surface on the south side than the north, but this may have been merely local. The soil for the next 3 feet from the bottom was much lighter and contained very few fragments of pottery, whilst the upper 2 feet was indistinguishable from the surrounding soil. I found nowhere in the ditch any Roman remains, whilst almost all the British or Romano-British pottery was in the black earth, but flint flakes were distributed throughout and were present in considerable numbers just under the turf, both within and without the ditch.

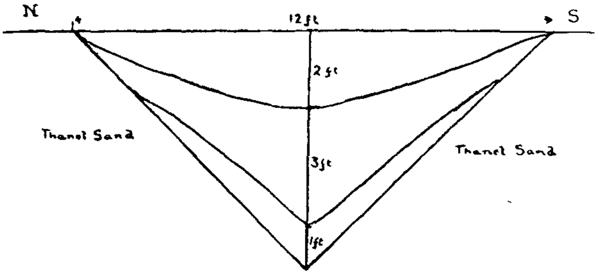

FIG. 1.—SECTION OF DITCH.

Fragments of pottery are not found in the soil in other places below about

18 inches. Where they are found below plough depth I consider the soil has been somewhat raised by the denudation of the sand from the higher parts of the hill, but pottery is very scarce except in the ditch; doubtless, any left on the surface would soon decay, as the baking is so inferior.

The greatest depth I saw was 6 feet upon the southern side, where the soil was sand—some of the other foundations did not require to be so deep—and at a depth of 2 feet or 2 feet 6 inches it was not so easy to distinguish between the filled-in ditch and the natural soil, but the inclusion of occasional fragments of pottery made it fairly certain that the soil was disturbed. Still I have the impression that the depth was greatest on the south side.

North of the corridor connecting the Isolation Blocks and east of West Isolation Block the ditch appeared to thin out, although the excavations were deep enough to expose it, and I fancy a road entered the camp at this point coming from the trackway. On the south-east is a somewhat damp and marshy piece of land, and I suspect there was originally a spring at this point which supplied the camp with water, probably thrown out by the clays of the Woolwich and Reading beds, an outlier of which lies north and east.

To the north of the camp, at a distance of about 70 feet north from where I consider the ditch runs, is a straight bank running east and west, forming one of the boundaries of the "Stag Field." This bank has been a puzzle to me; the land falls away on the north side, leaving the bank about 2 feet high, whilst on the south the top of the bank is level with the field. There is no ditch, and I am uncertain whether this is an exterior earthwork or has been the accumulation of sand from rain denudation of the hill on the south of an old hedge, and denudation on the north side assisted by the plough. The very gentle slope of the hill here seems hardly sufficient for either or both of these causes to have had the effect of making a bank. Where it has been cut through by a drain I could not be certain of any ditch. It may possibly have formed one side of an ancient cattle-pen—the other sides having been levelled.

On my last visit, however, on 10th June, I found slight evidence of the ground about the bank having been disturbed below plough depth.

The V-section of the ditch is, I believe, uncommon, but distinctly British, as at Loughton Camp and Ambresbury Banks, Epping Forest. In reporting on Ambresbury Banks, General Pitt-Rivers observed:—"I have not usually found the bottoms of the ditches of British camps pointed . . . I have always assumed, however, that where the old sides of the ditches are found to stand at an angle of stability of 45° . . . that it indicates that the entrenchment was intended to be more or less a permanent work."[1]

In the centre of the camp a large number of flints fresh from the chalk were buried. These contained no admixture of pottery or flakes, and were apparently comparatively recent, and I could not account for them until I came across *The History and Antiquities of Carshalton*, by George B. Brightling, which makes me think they are connected with a building to which he refers as follows:—

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[1] "Report on the excavation of the Earthwork known as Ambresbury Banks—Epping Forest." *Trans. of the Epping Forest and County of Essex Field Club*, vol. ii, p. 65.

"To the east of Oaks Park is a field called 'Stag Field.' When the twelfth Earl of Derby resided at the Oaks he was acquainted with — Durrant, Esq., of Woodcote, the owner of the field, and at his expense there was erected a wooden tower with a staircase, and on the top a large metal or gilt stag to please the Earl, who could see it from the windows of the Oaks mansion. The field still goes by that name, although the stag and tower have disappeared for some years."

The diameter of the camp, which appears to be almost circular, is about 500 feet, and therefore contains about 4 acres 2 roods. In the centre one or two hearths were cut through, showing burnt pebbles and pot-boilers at a depth of about 12 inches.

Outside the camp, especially to the south-west, mainly in the south part of West Isolation Block, were found remains of much more interest. These were a number of interments marked by ashes and calcined bones, fragments of pottery, and in one instance a calcined skeleton lying, as I was informed by Mr. Schneider, upon its side in a drawn-up position, and on a large slab of burnt stone. Under the stone was a molar of *Bos* and I think some bones. The skull was almost if not quite entire. When I saw the place the following day the bones had been almost all removed, the skull smashed, and the stone lay broken in fragments. From a portion of jar which was preserved the skull appears to have been that of a child about six years of age.

The stone fragments, however, have been preserved, and prove it to have been the lower part of a saddle-backed corn-crusher, measuring 13 x 21½ inches in extreme width and length, and about 4 inches in thickness.

The depth of the hollow upon one face is about one-third of an inch. The stone is apparently a sandstone. With the other burials, of which I saw at least seven or eight, I found no vessels, only fragments of pottery, with calcined flints.

Under the turf adjacent to these burials I found numerous flint flakes, all made from green-coated flints, which are plentiful at the base of the Thanet sand. This green-coated flint appears to have been much preferred in this district for making implements to flints fresh from the chalk; it seems to contain more water, and flakes much more easily.

The flint implements found have been confined to a well-worked round scraper from the surface, a hoe from the upper part of the ditch, a hammer-stone from a depth of about 18 inches, a remarkable sickle-shaped implement in the vicinity of the camp, which may have some connection with the cereals to which I shall allude later, and two or three poor scrapers and used flakes. A small cake of copper was found under the turf, but I could not learn if it was associated with a burial; I think it was not, having been lying in the turf.

The most interesting find outside the ditch was a small cup with four handles, standing 4⅛ inches high, with base 2 inches in diameter (Fig. 2). This was, unfortunately, slightly broken by the workman. Underneath upon the base are some scratches to which I would call attention, as they have a very modern appearance, though the workman assured me he did not do them. He had taken it home and washed it before I saw it, but from his account it contained no bones or ashes. It was found about a foot below the surface.

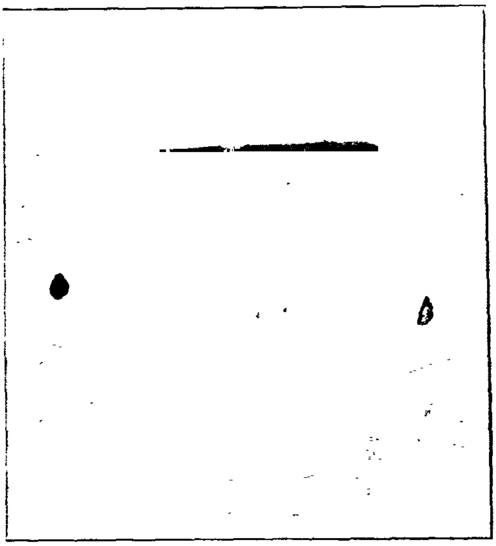

FIG. 2.

From the ditch itself I obtained a considerable quantity of pottery, taking into account the comparatively short extent of the opening and my only having been able to visit the works for half an hour or so occasionally, except upon one morning when I was able to watch the work whilst an interesting portion was being excavated. A great deal of pottery was therefore broken up and scattered, though I recovered some from the waste heaps. When found it was all so soft that it was impossible to get even small fragments out without breaking, or several small pots might have been preserved fairly intact.

In several places bones of ox or horse were found, but too decayed for preservation or identification. From the washings of some of the larger vessels, I recovered, in at least three instances, grains of cereals. I have come to the conclusion from the blackness of the soil and these cooking pots that the ditch was used as the general cooking place as being most sheltered from the wind. Two hollow smaller saddle-backed corn-crushers (lower stones) were found, but neither of these are burnt as was the one laid over the skeleton.

One interment, or what I considered to be an interment and not a fireplace, was at a depth of 4 feet. There were ashes, but I could not see calcined bones, two flint flakes, a number of calcined flints and much black earth with fragments of a pot, the exterior diameter of rim, of which I estimate at 15½ inches. Another similar interment was at a depth of 6 feet, where I observed plentiful ashes and burnt flints with broken pottery from which I obtained wheat and barley grains.

A third burial was found at a depth of 3 feet 6 inches from which were taken various pieces of pottery. Altogether I noticed some seven or eight burials in the foundations of West Isolation Ward lying to the south, the ditch itself passing through the north-east of the foundations of that block. The interments, therefore, as far as opened chiefly lay to the south-west of the camp, but I noticed one or two others to the north. Whether these were originally all "flat graves" or had low barrows over them it is now impossible to say. The ground has everywhere been levelled.

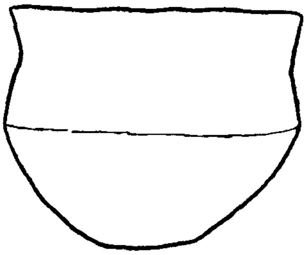

FIG. 3.

One specimen of black glossy ware which I have been able partially to reconstruct, resembles ware from the Department of the Marne in the Morel Collection which I believe is attributed to the fourth or third century B.C.; the height is 3½ inches, exterior diameter of rim 4½ inches, height to shoulder 1½ inches (Fig. 3). Several fragments of similar ware were found.

The small pieces of Red Samian ware, supposed to belong to the late first century A.D., were found a little distance from the camp, and the same may be said of the fragment of a pedestal urn of the Aylesford type known as "late Celtic," or about B.C. 50 (Figs. 4 and 5). These fragments may therefore be altogether later than the camp itself.

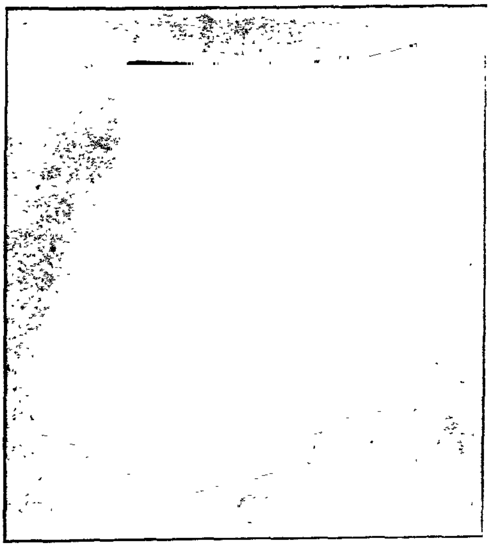

FIG. 4.—FRAGMENT OF URN.

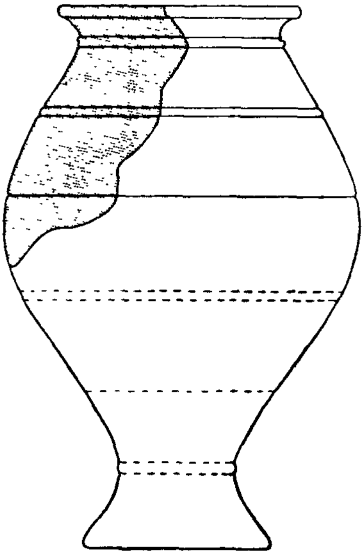

FIG. 5.—RESTORATION OF URN (FIG. 4).

The fragment of a handled jar with "cordon" markings was found, similar to jars found at Colchester. The bulk of the pottery was very coarse, the clay mixed with powdered flint and only partially baked as well as very irregularly fired. Some fragments have finger-nail ornamentation on the rims, others have similar patterns on the shoulder. I have not noticed any with cord markings or incised lines, the only pattern beside the finger-nail ornamentation being reed-like markings on some very coarse ware, which may have been caused by the pots having been built up inside reed baskets when being manufactured. In some places leaves of grass appear to have been in the clay and been burnt out in firing.

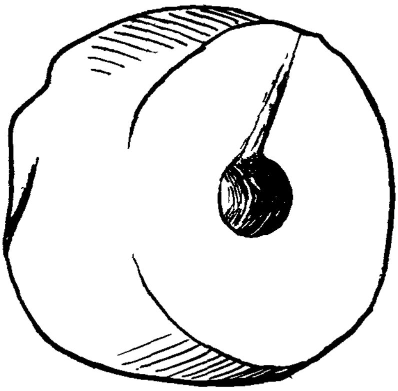

FIG. 6.

Several loom weights (Fig. 6) were discovered made of slightly baked sandy clay, height 4 inches, diameter 5 inches, with a central hole of about ¾-inch diameter. These cylinders show signs of use, the cord which passed through the holes and by which they were suspended has left its mark upon the side of the holes, and one specimen has apparently broken in half from the action of the cord.

But the most curious earthenware consists of fragments of perforated tiles (Figs. 7 and 8) which appear to have measured about 7¾ inches by 12 inches with a thickness of 1 to 1½ inches, pierced by holes of about ½-inch diameter. These tiles were numerous and are I believe unique in this country. They all seem to be very much burnt and their use is perplexing. I incline to think they formed movable kilns for pottery making, but so far I have not come across anything but fragments either in the ditch or associated with burials, neither have I found any half-baked pottery, except possibly a fragment of the handle of a jug, to show that the manufacture of pottery was carried on at or near the camp. The presence of very suitable mottled clay in the Woolwich and Reading beds only two hundred yards from the camp shows that there was suitable material close by. If these tiles were not used in kilns, they may have been used when cooking. This would account for so many being in the ditch. The use of looms give us some idea of the civilisation of the Bibroci, if indeed I am correct in attributing their headquarters to Waleton. I may point out in support of this conclusion that there is no other known British camp nearer than War Bank in Kent, distant about 10 miles in a direct line or the smaller one at Hayes Common, Kent, also distant 10 miles, or Wimbledon, if this is British, 6½ miles.

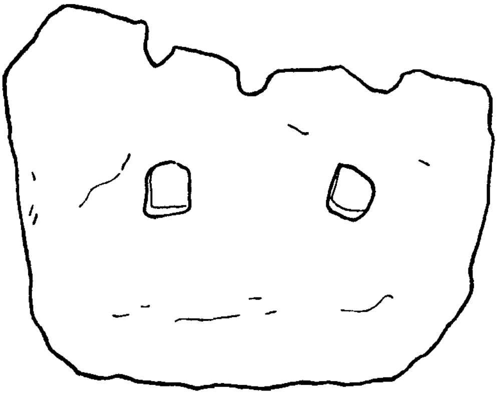

FIG. 7.

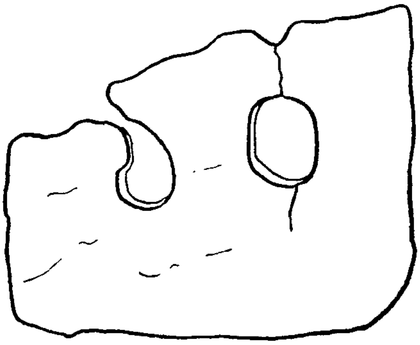

FIG. 8.

With regard to the seeds found in washing the pottery, Mr. Clement Reid, F.R.S., has kindly identified same for me and writes as follows: "Burials" (this refers to some from an interment). "*Triticum sativum, Hordeum vulgare,* carbonised." Whilst from pottery taken from the ditch he finds: "*Triticum sativum* (wheat), *Hordeum vulgare* (barley), *Chenopodium Bonus-Henricus* (Good King Henry)." Of the latter he says: "Good King Henry is a common weed of cultivation, sometimes used as a pot-herb. It is very common in Roman Silchester, but whether as a weed or cultivated plant I do not know. You have only one seed of it." "Wheat and barley occur together in just the same way at the lake-dwelling of Glastonbury (pre-Roman). The various Roman sites I have thus far examined yield wheat only, barley having seemingly for a time gone out of cultivation. I do not know whether this generalisation will hold."

To sum up, we have near Wallington a British camp, probably the head-quarters of the Bibroci, which as the wall-town gave the name to the village of Wallington. If so the town must either have been preserved during the Roman occupation or must have been the Anglo-Saxon name in memory of a British town which had been destroyed. The former hypothesis seems the more probable. On the other hand the latest pottery, if late Celtic, would point to the town having been destroyed by the Romans and the fortifications levelled at that time. The absence, so far, of Roman or mediæval remains in the ditch, point to same having been filled up at a very early period.

The pottery is so very rude, with so little ornamentation that although some is late Celtic, some may be very much earlier, and about this we have at present little evidence for forming an opinion. It requires careful and systematic excavation of the ditch, which I hope may yet be carried out, to ascertain if there is any order of deposition in the ditch of the two kinds of pottery.

The interments show no trace of urn burial, but only of cremation entire and partial. The fact of no bronze or polished neolithic implements having yet been found, and the copper cake found on the surface outside the camp near the cemetery being the only metallic connection with the Bronze Age, leads me to think that the camp dates from very early Bronze if not late neolithic times, as the various remains may have accumulated for centuries before the Roman invasion. It is clear, however, that the art of weaving was known and agriculture practised, whilst domesticated animals, horse or ox, were kept and slaughtered, their bones, regardless of sanitation, being thrown into the ditch, whilst their flesh with parched and ground corn constituted the food of the inhabitants, who possibly roasted the flesh on earthenware grids.

We can thus give to Wallington the respectable antiquity of 2,200 or possibly 3,000 years, and have increased the probability that a strong Roman station was established in the neighbourhood (possibly Noviomagus) to overawe the tribe whose stronghold they probably destroyed.

In conclusion I desire to acknowledge the assistance I have had in collecting the materials for this paper, especially from Mr. Reginald A. Smith in regard to the pottery, Mr. Clement Reid, F.R.S., for information as to the cereals, Messrs. Treadwell and Martin, architects of the Southern Hospital, for permission to visit the site, and to their representative, Mr. Schneider, for information and plans; to Mr. Hooper, clerk of the works, and to the Metropolitan Asylums Board for the loan of various objects for exhibition.

List of Objects Found.

OBJECTS.	POSITION.
Cake of copper	At a depth of about 6 inches outside the ditch.
Earthenware loom weights	Probably from the ditch. Made of sandy clay, some very indifferently burnt. Cylindrical, 5 inches diameter, 3¾ to 4 inches in height, perforated by hole ¾ inch diameter. Worn by cord used for suspension (Fig. 6).
Earthenware perforated tiles	Very thoroughly burnt, found in ditch, measuring 7¼ by 12 inches (?), and varying from 1 to 1½ inches in thickness. Perforated with holes ½ inch diameter (Figs. 7 and 8).
Bones	From ditch *Bos* (?).
Tooth	Ditto *Bos.*
Ditto	*Equus caballus.*
Earthenware food vessel	Probable height 18 inches and 12 inches diameter, ornamented with finger-nail marking on shoulder. Contained carbonised seeds of wheat, barley and "Good King Henry" from ditch.
Base of vessel	Coarse, thick, reddish ware, diameter of base 5½ inches.
Drinking cup (?)	Blackish, smooth ware, not made on wheel, base 1¼ inches diameter with hemispherical concavity underneath, diameter 3½ inches at shoulder, height to shoulder 1¾ inches, total height probably 2¾ to 3 inches.
Base of vessel	Thick, coarse ware from ditch, diameter of base 5½ inches. Contained carbonised wood etc.
Rim of vessel	Coarse ware from ditch, with finger-nail pattern.
Shoulder of vessel	Very dark grey ware. Basket or wattle marks on exterior.
Earthenware pipkin	Base of vessel of coarse ware.
Rim and shoulder of vessel	Dark pottery, rim about 6¼ inches diameter, shoulder 7½ to 8 inches diameter with burnt wood and grains of wheat and barley, together with burnt or charred wood.
Incense cup	From a depth of about 12 inches outside camp, four handles. Height 4⅛ inches, diameter of rim 3¼ inches, base 2 inches, diameter at shoulder 4½ inches (Fig. 2).
Drinking cup	Fine black ware. Height 3½ inches, diameter of rim 4½ inches, height to shoulder 1½ inches (Fig. 3).
Mealing stone	Saddle-backed sandstone (Lower Greensand ?), broken. Oval, probably about 14 inches in length.
Ditto	Ditto ditto. Width 8 inches, length probably 14 inches.
Interment	Partially calcined skeleton reported to have been lying in drawn-up position upon large calcined mealing stone. Portion of jaw shows skeleton to be that of a child about 6 years of age. Underneath the stone was found tooth of horse. The mealing stone measured 21½ inches by 13 inches and 4 inches thick.

OBJECTS.	POSITION.
Sundry cremations	Found outside camp at a depth of about 18 inches. With calcined bones and ashes, fragments of pottery, pot boilers and pieces of perforated tiles.
Flint scraper	Well-worked neolithic scraper from outside camp.
Flint implement	Neolithic hoe ?, probably from ditch.
Numerous flint flakes	From outside camp, depth 6 to 9 inches.

A few fragments of Roman pottery from surface soil.

A considerable quantity of coarse British earthenware and remains of earthenware vessels from ditch.

NOTES ON THE ETHNOGRAPHY OF THE BA-MBALA.

BY E. TORDAY AND T. A. JOYCE, M.A.

[WITH PLATES XXVIII-XXX.]

THE Ba-Mbala are a Bantu tribe inhabiting the tract of country between the rivers Inzia (Saie) and Kwilu. They are practically an unknown people, since, though their name is familiar to anthropologists, virtually nothing has been recorded concerning their ethnography, and the portion of the map representing their country is an absolute blank, save for the conjectured courses of the two rivers mentioned above.

On the north-east round to the north-west they are in touch with the Ba-Huana, Ba-Yanzi, and Ba-Songo: on the west and south-west are found the Ba-Samba, Wa-Ngongo, and Ba-Yakka; and the Wa-Ngongo occur again on their western borders.

They say of themselves that they are an immigrant tribe, and that they were driven from their country south of the Wamba by the "Mulua," a people, "composed of blacks and half-blacks, armed with guns, not such as we have (flint-locks). They killed many people, and the rest were driven away as slaves; so we fled to the north, others again to the north-east. We do not know what became of the latter." It is worth while mentioning, in connection with this account, that there is a tribe in the Kasai district also called Ba-Mbala; it may be possible that these represent the section mentioned as being driven towards the north-east.

The term "Mulua" appears to mean, simply, *rebels*, so it does not seem likely that very much concerning their origin can be extracted from the native report. Arrived at their present abode, the Ba-Mbala obtained possession of the country by purchase from the Ba-Songo and Ba-Yanzi, who had previously driven out the Ba-Bunda, with the exception of a few in the interior. There now seems some likelihood of their being ousted from their present position by the Ba-Yakka, who are encroaching on the south, and who, from the fact that they recognize a single paramount chief, possess a stronger social organisation.

Perhaps the chief point of interest in connection with the Ba-Mbala is the extremely primitive stage of culture in which they live. Though they are comparatively new arrivals in the country which they now inhabit, and which they have reached from the south-west, they have acquired their chief crafts and industries from the tribes living on their northern and north-western borders. Basketwork they have learnt from the Ba-Yanzi, pottery and metallurgy from the Ba-Huana (from the latter also the castration of animals). Their implements are few and primitive, and their sole weapon is the bow. Their social system is equally elementary, their villages are ruled by independent plutocratic chiefs, and no cohesion exists amongst them except such as is afforded by compacts between neighbours against murder. Slavery exists, but seems to be little more than nominal, and the difference between slave and freeman very slight. What might be considered a faint tendency towards a matriarchal system is to be found in the fact that a married man considers his father-in-law to rank before his father, and will often take up his abode in his wife's village and fight for it, even against his own relations. The existence of the hereditary class Muri, distinguished by a cap and bracelet, labouring under the disadvantage (serious among a people so frankly cannibal) of being prohibited from eating human flesh, and possessing, apparently, no compensating privileges, seems somewhat surprising in the midst of a culture so elementary.

As might be expected from the native account of their migration, the Ba-Mbala appear to be connected with the tribes of Angola, and it would seem only natural that the ethnic disturbances caused by the early Portuguese invaders, aggravated as these were by the continual raids in all directions made by various wandering tribes of marauders under chiefs styled Jaga, should have forced a more primitive and less warlike people to migrate inland. Indeed, in Purchas' account of Andrew Battell's adventures[1] it will be found that the *Gagas*, "marched towards the Province of Bambala, to a great Lord that is called Calicansamba," and their raids extended, subsequently to the Kwango, but the early accounts are so confused that not very much can be extracted from them.

Ladislaus Magyar,[2] in tracing the history of the Kimbunda (Binbunda), whom he describes as inhabiting the country south of the Kwanza and extending over five degrees of latitude and longitude, states that they came from the land of Morofu in the north-east, fighting their way to the banks of the Luando. There they fell under the influence of the Jaga, and for some time devoted themselves entirely to raiding and cannibalism. At last certain of the chiefs, seeing that the taste for human flesh was the cause of continual intertribal strife, and fearing for the future of the race, formed a society the members of which were sworn not to indulge in anthropophagy. This society was kept secret owing to fear of the Jaga and their adherents, but at length civil war broke out, and the chiefs and their followers who had joined the organisation were forced to cross the Kwanza, south of which they settled and spread over the tract already indicated. The ostensible cause of the war was the defection of a certain section of the tribe, who, preferring to follow the Jaga, refused to obey the orders of the Soba, or head-chief of the Kimbunda, when he commanded them to relinquish their raiding habits and settle down to cultivation. Now if the members of the anti-cannibalistic band were sufficiently numerous to obtain a secure footing south of the Kwanza, it seems probable that the society must have had a wide sphere of influence, and it is quite likely that this influence may have extended to the Jinga further north, who may or may not have been racially connected with the Kimbunda, but who had undoubtedly also come within the sphere of Jaga influence. It is interesting to notice that, in later times at any rate, the Ngola or chief of this people appointed sub-chiefs to whom he gave, as sign of authority, a cap, called *kajinga*, and a bracelet, termed *malunga*, and that these sub-chiefs were distinguished by a special title, here *Kalunga*.[1] An attractive theory might be formulated by assuming that certain of these had joined the organisation mentioned above, and had been driven out, in this case to the north-east. If this were granted, it would not be difficult to believe that the insignia of chieftainship had become hereditary, while the actual power, owing to economic reasons, had fallen into the hands of the rich. As the true circumstances of the migration gradually fell into oblivion, the prohibition against human flesh would become mystically attached to the holders of the old emblems of chieftainship, since it would have been the chiefs who, in the first place, would have been the members of the society, and not necessarily their followers; these would have merely followed the lead of their chiefs. But however satisfactorily this theory might account for the presence of the Muri sect among the Ba-Mbala, it is to be feared that it rests upon too insecure a foundation to be considered, in the present state of our knowledge upon the subject, anything more than the merest conjecture; moreover, the difference in terminology as regards bracelet, cap, etc., is against it. Still, in any case, the parallel between the Jinga sub-chiefs and the Muri of the Ba-Mbala is interesting, and it is noticeable that the social system of Magyar's *Kimbunda,* though more advanced than that of the Ba-Mbala, is nevertheless remarkably similar in many respects.

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[1] *Purchas his Pilgrimes* (1625), II, vii, 974.

[2] *Reisen in Süd-Afrika*, trans. by J. Hunfalvy, pp. 265 foll.

It may, perhaps, be as well to mention a few points of similarity between the Ba-Mbala and the peoples of Portuguese West Africa, though it would of course be unwise to lay too much stress upon them. Throughout practically the whole of Angola, among the Mushi-Congo, Ba-Congo, Ba-Ngala, Binbunda, etc., the poison ordeal is employed as a means of discovering the malign influence which is supposed to be responsible for every natural death: the poison appears to be the same, and the guilt or innocence of the accused is decided in a similar way. Purchas,[2] speaking of Loango, adds that the bystanders, when the victim shows signs of being overcome by the poison, "cry, *Undoke, Undoke,* that is, naughtie Witch," which is the same word as the term *Doki* used by the Ba-Mbala of a person possessed by *Moloki.* The usual system of government, throughout the parts of this country traversed by Capello and Ivens[3] and by Wissmann,[4] seems to be by petty village chiefs (among the Ba-Kongo called *Mfumu*),[5] often independent, but sometimes under the suzerainty of a head-chief who controls several villages. Inheritance by the sister's son is found among the Mushi-Kongo, Ba-Kongo, Ba-Ndombe, Bondo, Kalunda, Binbunda, etc.; and Purchas,[6] in his account of

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[1] Capello and Ivens, *From Benguella to the Territory of Yacca*, vol. ii, p. 54.

[2] *Purchas his Pilgrimage* (1613) I, vii, 10, p. 875.

[3] *loc. cit.*

[4] *Im Innern Afrikas.*

[5] Baumann, *Mit. Ant. Ges.*, Wien, xvii, 165.

[6] *Purchas his Pilgrimes* (1625), II, vii, 981.

Andrew Battell, tells how "The Towne of Longo . . . is governed by four Princes, which are the King's sisters' sonnes. For the King's sonnes never come to be Kings." It is rather surprising that circumcision, so common throughout Angola, is not practised by the Ba-Mbala.

Turning to the east, it is to be observed that the only people who show any similarity with the Ba-Mbala are the Ba-Ngodi and Ba-Dinga described by Wissmann[1] as inhabiting the southern bank of the Kasai. Both are keen traders (Wissmann compares them to the Kioque in this respect), both frequently ornament the forehead with a long transverse scar, both carry the grooved bow characteristic of the Ba-Mbala,[2] and, finally, the huts of the former are rectangular, composed of palmleaf-ribs with a rectangular door 2 m. from the ground, reached by "eine Bank oder tischartige Erhohung;" and Wissmann adds "Die Hutten wichen in ihrem Bau wesentlich von denen ab, welche wir bisher gesehen hatten." So little information is accessible concerning the tribes inhabiting the whole tract between the Wamba and the Kasai, that it is useless at present to enter into any discussion as to the relation between the Ba-Mbala and the peoples to the east of their territory, but the similarity between the peculiar bows and huts of the Ba-Ngodi and those of the Ba-Mbala is at least interesting. With these few words of introduction it will be best to proceed forthwith to the information collected by Mr. Torday during the past year concerning the ethnography of the Ba-Mbala.

CLOTHING AND ORNAMENT.

The clothing of both sexes consists of native made palm-cloth, *Kipussu*, of which a strip about a yard in length and a half-a-yard in width (in the case of the women, a trifle less), is worn round the waist, leaving the upper half of the buttocks bare at the back (a fashion found among the Baluba also). This cloth is often fastened by a girdle of similar cloth, or grass coloured with red clay. European cloth and beads are also seen, but not in any quantity. The skins of goats and (rarely) antelopes are cut into aprons and worn in front by men, they are simply dried in the sun and oiled; the hair is not removed. No special covering or ornament for the genitals is worn, but the women wear a string of beads under the waist-cloth, according to the regular Bantu fashion. Garments are sewn with eyed iron needles of native make, and palm-fibre thread. The head is sometimes covered with a piece of red *Kipussu*, to hide baldness or white hairs, and this covering is also used by the special sect of *Muri*, described later. A man who has slain a great enemy wears the finger-bones and penis of the latter wrapped in a piece of cloth, on his head; this is considered a great fetish and is termed *Pungu*.

Hair is allowed to grow upon the top of the head, in the form of a cap, the rest is shaved and painted black with soot and palm oil. Some wear hair at the back of the head only, made up into tresses with soot and palm oil. The moustache is usually shaved; the beard, which grows on the point of the chin only, often attains considerable length, but is bound up under the chin, and pieces of clay are often hidden in the knot to give it a more important appearance. The eyebrows are shaved; hair under the arms is pulled out; women shave the pudenda, men do not. Circumcision is not practised, but is known, for it is found among neighbouring tribes.

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[1] *Loc. cit.*, pp. 359-60.

[2] See illustration on p. 416.

Ears with perforated lobes occur, but it does not seem that ornaments are worn in them.[1] Nose and lip ornaments are unknown.

Combs, made of a number of wooden teeth bound together, are worn in the hair by both sexes and form useful appliances for scratching the head.

Bracelets, of European imported brass, are worn in great numbers. These are not meant to be removed. Iron bracelets, of local make, are occasionally worn on the arm by men, but are rare. A special bracelet called *Mwena*, characteristic of the peculiar *Muri* sect, will be mentioned later (p. 409).

Rings of imported copper and brass, of spiral shape and easily removable, are worn on the fingers; the great toe is also often ornamented with a ring.

Beads are worn by both sexes.

Teeth, human, ape and leopard (the last usually imitations), are reserved for men.

Horns.—Small antelope horns, as well as imitations made of imported tin, are worn by men suspended round the neck.

Painting.—The favourite colour is red; cloth and body are coloured with red clay, in place of the well-known *Tukula* wood, which is here too expensive, being imported from the Kasai. The object of painting the body is, admittedly, to increase beauty, but the practice is also followed by mourners, the women using brown clay, the men soot.

Scars are made upon the face and body at puberty, and project considerably above the surface of the skin. The natives deny that any foreign matter is inserted in the wounds, but say that the healing process is artificially retarded. The commonest patterns are, among men, the following:—A line running over the forehead from the exterior corner of one eye to that of the other; a line more or less straight, across the chest, about one inch broad and often more than an inch in relief, and a lozenge pattern round the navel. Women seldom ornament the face in this way, but decorate the arm and stomach with a series of lozenges.

Tattooing is rare, but is found occasionally; the design is usually very simple, consisting of a quadrilateral on the arm from 7 to 13 cm. square. The instrument is composed of three or four needles, and the pigment used is decayed rubber.

No post-mortem scarification or tattooing is practised.

FOOD.

The ordinary food consists of manioc flour, mixed with water and boiled; maize is very seldom used. Manioc leaves are also eaten, prepared with palm oil and native pepper (*pili-pili*); this dish is called *Gato*. As regards domestic animals, goats, pigs and dogs all find their way into the pot; as to other animals, everything that liveth and moveth, from man down to grasshoppers and ants, including the common brown owl, which is despised by the neighbouring tribes, is food for the Ba-Mbala. One animal, however, must be mentioned as an exception, the frog. This is all the more remarkable because this animal is eaten by Ba-Huana women, although should a man of that tribe be found eating one, he is laughed to scorn. Hence the name *Yunda* "froggies," which the Ba-Mbala apply to the Ba-Huana.

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[1] "I have never seen ornaments worn in the ears."

The following are regarded as especial delicacies: Human flesh (called *Misuni*), a thick white worm found in palm-trees, rats, locusts, blood boiled with cassava flour. The following are forbidden to women:—Human flesh, goat's flesh, hawks, vultures, small birds, snakes, parrots, crows, and all animals hunted with weapons, except the antelope and a small rat which is not uncommon and is called "Zibiri" in French. Certain restrictions as to food are observed also by the Muri (see later).

Although human flesh is forbidden to women, nevertheless, on the evidence of an old Mo-Mbala woman, there are many who partake of it in secret. "When the sun shines we say:—'Eat *Misuni?* Bah! Never!' and we spit on the ground; but when night comes we steal to the grave and take our share as well as the men."

The only stimulant used is the kola-nut, which is eaten by the rich in great quantities. Practically the only oil used is that obtained from the palm-nut, though in quite exceptional cases, ground-nut oil is found. Spices are used, *e.g.* a native cayenne, and a kind of black pepper, also native, called *Kef.*

Salt is particularly prized, and is also used as currency; it is made from the ashes of water-plants, but imported salt, especially that in crystalline form, is greatly preferred. These crystals, when obtained, are perforated and strung on a string, which is then simply dipped into the pot containing the food. The natives believe that imported salt falls from heaven in Europe. Salt is eaten as a stimulant on a journey, and salt water is also drunk on these occasions. Geophagy is common, as is the case among the neighbouring Ba-Yanzi; the earth eaten is said to be a cure for stomach-ache, it has an astringent taste, and if the hand is buried in it for some time, it becomes quite wrinkled.

Food is never eaten raw, though it is preferred high; human and other flesh is often smoked, but is always cooked before being eaten. The food is simply boiled in water or palm oil in the ordinary pot, *Dzungu* (Plate XXVIII, Fig. 3), which is cleaned before use; ovens are not found. Cooking is done in the house by women alone; leaven is unknown. The native drink is *Makana,* or palm wine, obtained from the *elaïs.* A deep cut is made near the top of the tree, and a gourd is attached, into which the sap flows. The regular mealtimes are early morning and evening, but a native will eat at any time during the day that he feels hungry.

Fire is procured by means of flint (found in rivers), steel, and tinder obtained from the palm-tree; dead wood is used as fuel. (For the manufacture of fire-steels, see METALLURGY.)

Domestic Animals.—Under the heading of food may be considered the subject of domestic animals. Besides those mentioned above, there is the dog, the small breed common in Central Africa, thin, red-haired, bad-tempered, with a voice like the crowing of a cock. They are used in hunting, when rattles are attached to them (Plate XXVIII, Fig. 7), as food, and as general scavengers. If a dog steals it is attached to a *Taka* (see under War), just like a man, and appears to feel its position keenly; the owner of an animal is responsible for any damage it may do. Goats and pigs are slaughtered for food by being clubbed, but the former are often skinned alive, a process which is said to improve the quality of the meat; fowls are taken by the head and whirled round until the body breaks away. Animals are generally well-treated by the natives, and young dogs are fed by the owner, who chews their food and spits it into their mouths; otherwise, as regards food and housing, animals are left to shift for themselves. Both goats and pigs are castrated, and the man who performs the operation must abstain from his wife on the night previous, or his death is assured; he then paints and oils himself liberally and proceeds to operate. Salt is rubbed into the wound, and, in the case of pigs, the cavity is filled with sand. They are very skilful, and it seems that animals hardly ever die[1] as the result of the operation, which they have learnt from the Ba-Huana.

Cannibalism may be described as an every-day occurrence, and, according to the natives themselves, is based on a sincere liking for human flesh, which, when used for food, is called *Misuni.* Natives speak quite freely about it, though of course in the presence of state officials, judges, etc., they are naturally silent on the subject; but an ordinary trader can obtain any information on this head, and is sometimes offered the opportunity of experiencing the flavour of the delicacy; in fact, if an ordinary individual wished to assist at a cannibal feast he would not find any great difficulty in doing so, though if he attempted to interfere he would be killed on the spot. Enemies killed in war, people buried alive after the poison test or dying in consequence of it, relations (except father, mother, children, uncles, or aunts), and sometimes foreign slaves, are all eaten; in fact, any corpse which is not in the last stages of decomposition is considered a dainty.

Victims killed for cannibalistic purposes are often buried for two days before being eaten, during which period a fire is kept burning on the grave; the body is then exhumed and cooked with manioc flour. Every part of the body, including the blood, and with the exception of the penis, is consumed; the last, in the case of an enemy killed in war, is wrapped in a piece of cloth with his finger-bones and worn on the head of the slayer, forming the *Pungu* fetish mentioned above (p. 401). The bones are in some cases hung on a tree in the centre of the village, but are often simply thrown away.

Vessels in which *Misuni* has been cooked are broken and the pieces thrown away. Cannibalism accompanies the ceremony by which a kind of alliance is established between chiefs of the same region (p. 409). Women, and the peculiar class known as *Muri,* are not allowed to eat human flesh (but see p. 403).

Tobacco is grown in great quantities, and used, when green, as snuff, or, when dried, for smoking without further preparation. Women rarely make use of tobacco, though occasionally young women take snuff and the elderly indulge in a pipe. Snuff is prepared by pounding the green leaf in a small wooden mortar with a long pointed handle, which is driven into the ground (Plate XXVII, Fig. 2). Snuff is offered between acquaintances; all Ba-Mbala men have the upper lip thickly plastered with snuff, giving them the appearance of wearing a green moustache; the idea is, possibly, to prolong the pleasure. There are three patterns of pipe: (*a*) a pipe of European form, *Kinzu,* (*b*) a pipe made from a gourd, *Motobo,* and (*c*) a pipe made of bamboo, *Fangu* (Plate XXVIII, Fig. 1). The two latter have pottery bowls of native make. When the natives smoke in company the pipe is passed from hand to hand. Hemp-smoking is rare, though it does exist; but it is considered a bad habit by the natives. Drunkenness is mentioned with respect as a sign of wealth.

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[1] "I have never known an animal die."

AGRICULTURE.

Ground for cultivation is cleared by the men, after which all other work is left to the women, whose sole implement is the *dembo,* or better, *temo,* an iron hoe, triangular and tanged, with the value, as currency, of three fowls or 300 *djimbu.* Manioc, called *soko,* bananas, *tichipi,* plantains, *mipindi,* sweet potatoes, *kata n'dunge,* small haricots, *makundu,* and ground nuts, *n'zuku,* are all cultivated, and tobacco is to be found in every village. Fresh ground is cleared yearly, and the crop belongs to the head of the family; irrigation is never practised. Charms of a simple character, such as empty egg-shells, a bone, or a broken pot, are placed in the fields as a guard against thieves.

SPORT.

Fishing is carried on by women by means of wicker traps, but there is very little water in the country.

Hunting is inconsiderable; for a long time game has been extremely scarce in the country, in fact, a man who kills an antelope is talked of for many miles round. Rats of all kinds form the principal game, and are caught in traps or shot with blunt arrows. Great communal hunts take place once a year, in June and July, when the game is driven by setting fire to the dry grass. It is considered the greatest offence against a village to burn its grass, otherwise no strict bounds are observed. After the hunt, if successful, a present, consisting of horns or a skull, is made to the village fetish, if failure has resulted, the unhappy fetish is severely reprimanded by the magician.

Bows and arrows are the only weapons used in hunting[1]; the bow is called *buta,* while the generic term for an arrow is *betutu.* Arrows are of several patterns; for small game the points are of wood hardened in the fire, the *tomo* has one point, and the *kikashi* four. For bigger game, war arrows, with iron heads, called *mivi,* are used (Plate XXVIII, Fig. 8). The use of poison, either in hunting or in war, is unknown. The natives are rather poor shots, and are not capable of doing much harm at a range of over 50 yards. Dogs are employed in hunting and are cleverer than their masters, and often succeed in taking partridges; a wooden rattle, shaped like a hawk-bell, and containing a loose stone as clapper is hung between the hind legs of a dog when driving game (Plate XXVIII, Fig. 7). The man who has killed a bird tries to sneak away without being observed, and does not return until he has eaten it, for fear lest another may wish to share in his prey. Wooden whistles are used in hunting, and are often provided with a finger-hole, by which the note can be altered (Plate XXIX, Fig. 2).

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[1] "Once only have I come across a native who used his flint-lock for killing game, in this case guinea-fowl. He used to hide himself in the bush, so that the muzzle of his gun was the only thing visible; this he used to move up and down, and the guinea-fowl would come close to see what it was, when he would bag several with a single shot. At least this was his account."

Crafts.

String is made of palm-fibre (*Pussu*) twisted; sewing-thread, of the same, finely divided.

Basketwork, an art learnt from the Ba-Yanzi, is highly appreciated, and the manufacture is confined to men. The generic term for a basket is *kisangi*; the quadrangular pattern, made of a water-plant, is called *mahapa.* The ordinary pattern is circular, on a quadrangular wooden base, and is termed *muteke*; the cover, which fits closely, is called *bango* (Plate XXVIII, Fig. 4). Small baskets, called *katekwa*, are used as purses to contain shell-currency (*djimbu*) (Plate XXVIII, Fig. 5), and a triangular pattern, termed *leko*, is used for food (Plate XXVIII, Fig. 6). Baskets are often waterproofed by means of a thin covering of wood and clay. Neither weapons nor pottery are covered with basketwork.

Pottery is made by women, and is an art learnt from the Ba-Huana. The wheel is not in use, the pot is built up on a base, some old vessel serving as a stand on which it is turned round and round. The ordinary pot, *dzungu*, is made in different sizes, varying in diameter from 13 to 41 cm. (Plate XXVIII, Fig. 3). The edge is "flared," and below it is an ornamental band of incised parallel horizontal lines; no painted decoration is applied, either before or after firing. Gourds are used as substitutes for pots. Pots and pipes are the only articles made of clay; the former are broken on graves.

Pigments used are red, pale violet, white, and brown clays; the first two are eaten also. Articles to be dyed undergo no special preparation beforehand, they are simply immersed in the solution. As has been said before, the favourite colour is red.

Metallurgy.—The only metal which is not imported is iron, the ore of which is found throughout the country in great abundance, and small ingots are used as currency (*Kimburi*). Smelting and forging have been learnt from the Ba-Huana. The metal when smelted is not subjected to any treatment beyond hammering, except in the case of the "steels" which are used with flint for procuring fire; these are wrapped in certain herbs, the identity of which is a carefully-guarded secret, heated to a high temperature, and thrown into cold water. The tools of a smith consist of the double bellows, similar in pattern to those employed by the Baluba and a T-shaped hammer with a pointed handle. It is practically impossible to obtain a specimen of these hammers, since death is the portion of a smith who parts with his tools. No stone implements are found, and no legends point to a time when metal was unknown. A smith teaches his trade to his nephew, who also inherits his tools. It would be idle to attempt to speak of the social position of smiths among a people where social distinctions are hardly yet recognised.

Engineering.—No earthworks or palisades are found; even bridges, constructed of creepers and very frail, are rare, but it must be remembered that throughout the country there are hardly any streams which cannot be crossed by wading.

Conservatism.—As might be gathered from their backward condition, the Ba-Mbala are strongly opposed to any change; as an instance of conservatism may be mentioned the fact that though they have numbers of flint-lock guns they only use them for the purpose of making a noise, and only in rare instances for war or hunting.

Housebuilding proceeds as follows:—Stakes, of about 2 m. in length, are driven into the earth at a distance of about 15 cm. one from the other. These are so arranged as to form a rectangle, approximately 2 m. by 4·70 m.; over these grass is bound, and the whole receives a covering of palm-leaf ribs, bound tightly together; the roof is ridged and thatched with straw. The only opening is the doorway, the "threshold" of which is situated 1·30 m. above the ground; the door is rectangular, made of palm-leaf ribs bound together, and is shut by being slid between the wall and two stakes fixed to support it (Plate XXIX, Figs. 3, 4 and 5). Fetishes are affixed to the wall above the doorway.

It is reached by two steps, each composed of two forked stakes driven into the ground and supporting a crosspiece (Plate XXIX, Fig. 6); these steps are 0·25 m. and 1·00 m. from the ground respectively; there are no windows, and no verandah. The interior arrangements are simple; there is no special place for the fire, the smoke of which escapes through the door. The house is divided into two compartments, a large room in the front for adults, and a small one at the back for children. An arrangement of stakes and matting serves as a bed, and along one of the longer walls runs a palm-rib shelf, attached by one edge to the wall, the other supported by two strings fastened to the roof. This shelf is used for storage; weapons are hung on the wall. Houses usually face more or less north or south; every village has a house for the use of travellers where the unmarried men lodge. There is no difference in the houses of slave and freeman, and no special building for cattle, which find a lodging as best they can. Granaries are built only by the rich; these are on piles, and circular, with a diameter of 50 cm.

Neither pile-houses nor cave-dwellings are found; latrines are unknown; pigs and dogs remove the refuse which is thrown behind the house.

TRADE.

The chief currency in this region is the small shell called *djimbu*,[1] and relative values are as follows:—100 *djimbu* are equivalent to one fowl, or one-third *temo* (iron hoe-blade), or one big or two small *kimburi* (quadrangular iron blocks), or 330 grammes of salt; one male slave = 10,000 *djimbu;* one female slave = 15,000 to 20,000. These *djimbu* are certainly of Portuguese importation. The ordinary measure is "a basketful," and all baskets are of approximately the same size. The Ba-Mbala are great traders, and show considerable aptitude for this occupation; a man will buy goats in Kolokoto and sell them for rubber in Lukula; the rubber is sold to Europeans for salt, the salt exchanged for slaves, the slaves sold for *djimbu*, and more goats bought in the country where they abound.

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[1] Mr. E. A. Smith, of the British Museum, has kindly identified a sample of this shell as *Olivella nana.* He further remarks: "It is known as a West Indian species in some monographs. I have reason to doubt that locality. It was collected by Dr. Walwitsch in West Africa, and it is quoted as "West African" in Tryon's monograph. I can find no more definite distribution of the species."

Thus 8,000 *djimbu* purchases ten goats; for these 250 balls of rubber are obtained; the rubber is worth 62½ kgs. of salt, which can be exchanged for two slaves; two slaves fetch 20,000 *djimbu*, with which 25 goats can be bought; thus a profit of 150 per cent. can easily be obtained in the course of about a month. In the case of food and pottery, the trading is carried on by women. It cannot be said that labour is regarded as derogatory; and skill in handicraft is respected as a means of acquiring wealth; even chiefs are not ashamed to be smiths or basket-makers, though their natural preference is for trade.

Markets are sometimes established on the neutral ground between several villages, where an important chief has buried his *kissi*, or fetish.

The system of credit is well known, not only short credit from one market-day to another, but for longer periods. Interest is enormous, amounting to cent. per cent. at three months, and the debtor usually stays with his creditor until the debt is paid off. If eventually he cannot pay he becomes the slave of his creditor. Slave-children, slave-wives, slaves, and cattle of the debtor can be seized by the creditor, but the latter's chief usually interferes and lends him money at a tremendous rate of interest to pay off the debt; thus it often happens that the greater number of the inhabitants of a village become the slaves of their chief. If the debtor dies, his brother must discharge the debt; there is no claim on the corpse. War often follows the non-payment of debts, and traders of the same tribe as the debtor are seized and often killed. No trading language is used except Kikongo, and that but rarely. Middlemen are not paid, but make their own profit by cheating both sides.

SOCIAL ORGANISATION.

The system of government found among the Ba-Mbala is extremely elementary; it might be described as communism with a strong flavouring of anarchy. The unit is the village community, at the head of which is a ***Fumu***, or chief, who holds that position by reason of his wealth in slaves and wives. Upon his death the power devolves upon the individual who comes next in riches; there is no form of election. No tribute is paid to the ***Fumu***, but he has several privileges, including the right to receive: (*a*) the ribs of every man killed for food, and (*b*) a hind leg of each beast killed during the common hunts. His principal duty is to lend money to his "subjects" when they have incurred fines which they are unable to pay, and, consequently, are in danger of becoming slaves.

Women and children cannot hold the office of *Fumu,* and it may be taken as a rule that men by the time that they become chiefs, have attained the age of, at least, thirty years. Villages are small, and it often happens that a man, who has become rich, leaves his village with his wives and slaves and a few relations, and establishes a village of his own, with himself as *Fumu.*

Although society is in an embryonic stage, there is one form of compact which deserves mention; the most powerful, that is, the richest chief of the neighbourhood, will invite the rest of the chiefs in his vicinity to a meeting held on his territory in order to make a pact against bloodshed. A slave is fattened for the occasion and killed by the host and the invited chiefs and their followers partake of the flesh. Participation in this banquet is taken as a pledge to prevent murder. Supposing that a chief, after attending an assembly of this kind, kills a slave, every village which took part in the bond has the right to claim compensation, and the murderer is sure to be completely ruined. For the procedure in such cases, see under JUSTICE.

An alliance between two chiefs is contracted by making incisions in the breast of each and rubbing the blood of the other into the wounds. In this case death is the penalty for killing a man belonging to the village of the other.

Muri.—Perhaps the most remarkable fact in connection with Ba-Mbala social life, especially when the primitive nature of their organisation is considered, is the existence of a class of men called *Muri.* These *Muri* may not eat human flesh, nor the flesh of fowls; they are distinguished by a fine iron bracelet, called *Mwena,* which is worn on the arm, and a head-covering of cloth. Great importance is attached to both these ornaments, the head-cloth may not be removed by anyone, should a man do so, even by accident, he is liable to be killed; the *Mwena* cannot be purchased,[1] but passes, at the death of the *Muri,* to his nephew, when the following procedure must be observed: The deceased is buried for about two months; after this his skull is exhumed, painted red, and placed in the house he used to occupy. The heir to the *Mwena* must steal this skull at night, without being observed, and, after hiding it a few days in the bush, take it home to his hut as a trophy. If a *Muri* is slain in battle, and the enemy become possessed of his corpse, they detach the arm bearing the *Mwena* from the body before preparing the latter for food, and return the bracelet to the dead man's tribe, to be given to the rightful heir. Wrongful appropriation of a *Mwena* is followed by instant death. The origin of this institution is shrouded in mystery, the natives say that it has existed "always"; no new *Mwena* are now made, so the number of *Muri* is limited and cannot be increased. The title *Muri* is prefixed to the name of the individual, *e.g., Muri Kongo.*

As a general rule all the freemen are more or less akin; kinship is reckoned very far on the female side, in the male line, not beyond the uncle and grandfather. The control of the family is vested in the father, but, when a man marries, his father-in law assumes paramount importance. In fact, it often happens that in war a man sides with his father-in-law against his own village. Genealogies are not reckoned beyond the grandfather, but the recognition of relationship, undesignated by accurate terminology, is carried very far.

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[1] "I have offered what is considered a small fortune for one without success."

Each married woman inhabits a separate hut, which she shares with her small children up to the age of three or four years. The husband changes residence every day, visiting his wives in turn. Women are regarded merely as a variety of domestic animal, but the household is usually peaceful, chiefly owing to the natural inactivity of the Ba-Mbala. No clans or corporations exist.

Marriage.—Two kinds of marriage are known: (*a*) Child marriage: a little boy, of his own free will, may declare that a certain little girl is his wife; by this simple act he acquires a prescriptive right to her. He visits his future parents-in-law and takes them insignificant presents. When he is of mature age, he gives a larger present, of the value of about 2,000 *djimbu,* and then he is allowed to cohabit with her. Their children belong to the eldest maternal uncle. This form of marriage is attended by no special ceremony. If the girl, when of age, is unwilling, he cannot coerce her, but if she marries another man, the latter must make him a present of several thousand *djimbu.* (*b*) Adult marriage: this is simply a matter of purchase; the price of a wife is from 10,000 to 15,000 *djimbu,* paid to the owner—father or maternal uncle—of the bride. In this case the children belong to the father. Should the woman die, not only is the money not refunded, but the husband is often forced to undergo the poison ordeal. Polygamy is common, but all wives have equal rights. Polyandry does not exist, but a childless man will secretly introduce his brother to his wife in order that he may have a child by her; such a proceeding is, of course, a *secret de polichinelle.* The children of a slave-woman belong to her master, who may or may not be her husband. After the birth of a child, the man must abstain from his wife for about a year, during which time the child is suckled; he may then resume intercourse with her after asking his father-in-law's permission, which is granted upon payment of *Kutusa Mwana,* a present of two goats. It is believed that an infraction of this rule would prove fatal to the woman, and, in the event of her death soon after childbirth, the husband is accused of being the cause and heavily fined, or, more often, compelled to submit to the poison ordeal. Wives follow their husbands, but a man often takes up his abode in the village of his father-in-law. Parents have very little authority over children, who leave them at an early age.

Morality, in our sense of the word, can scarcely be said to exist; virginity is not considered of the slightest importance, consequently unmarried women indulge freely from a very early age, even before they have reached maturity; one result of this is that solitary and unnatural vices and prostitution are unknown; but, on the other hand, sexual excess is having an evil effect upon the mental and physical characters of the race. Celibacy is rare, in fact only the result of poverty or ugliness amounting to deformity. The lending of wives is not practised. (See also under REPRODUCTION.)

Divorce is frequent; a man may repudiate his wife at will, and she may not again marry or even have intercourse with a man. Women can only rid themselves of their husbands by running away to a hostile tribe, by whom they are sold as slaves, and, indeed, often repurchased by their former husbands. In having recourse to this measure they run the risk of being killed and eaten by the tribe to which they have fled for refuge.

Widows can be claimed by the brother of the deceased; otherwise, if free women, they return to their parents and are allowed to marry again.

SLAVERY.

Three-quarters of the population are slaves; in fact, a chief really owes his position to the fact that he has acquired rights over the majority of his villagers by lending them money to pay their debts.

Slavery may be either congenital, or acquired (through debt or capture in war), theoretically the master has power of life and death over his slaves, but as bloodshed is forbidden this power is merely nominal. Slaves are exceedingly well treated and are considered the children of their owner;[1] they do not work harder than freemen, are usually provided with wives by their master, can possess property and other slaves, and can purchase their freedom if their estate of slavery is acquired and not congenital. They stand on the same footing as other property, and their master is responsible for their debts. There is no distinctive mark of slavery. When a man buys a new slave, he ornaments him on the first day with his best clothes and ornaments, and walks round the village with him to show him to his friends.

PROPERTY.

Everyone can own property; land is owned by the chiefs, or rather, a man who owns land becomes a chief; the renting of land is unknown.

There are no landmarks, but the owner of a piece of land buries a fetish there. As a matter of fact anybody can own land.[2] The owner of land has no right to the crops if raised by the labour of others, but he can, in the first instance, prevent the latter from establishing themselves there. Game can be hunted in the ordinary way over any land, but the great hunt when the grass is burnt is the privilege of the land-owner. Ownership exists as far as ponds and lakes are concerned, but running water has no proprietor.

A man's property is inherited by the eldest son of his eldest sister, or in default by his eldest brother; widows cannot inherit. No one can dispose of his property after his death by will, but he can, of course, give it away in his lifetime. Guardianship is known; the maternal uncle, *Lembe,* acts in this capacity.

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[1] "I really believe that they form, as a general rule, the happiest class among the population."

[2] "I myself have bought a hill on which to establish a market after having buried my fetish there."

MISCELLANEOUS.

The word of salutation is *Moyo,* but if two Ba-Mbala meet they do not use it, they simply stop and talk. The ordinary form of address is *Gwass,* uncle, that for chiefs, *Tata,* father. Personal names are changed at puberty, and afterwards as often as the owner pleases; there is no particular harm in using the old name. It is a sign of goodwill to offer Kola-nut to the traveller; on presentation to a chief the traveller is offered Kola-nut and palm-wine, the chief drinks first and passes the cup. Little consideration is shown to the aged, in fact, the word "old" is considered as something of an insult. The natives bathe when they come across a brook or river, and wash every day about noon; a fibrous stick is used for cleansing the teeth.

EDUCATION AND PSYCHOLOGY.

Parents have very little control over their children, who leave them early; they are left to learn by themselves, and as they are nearly always admitted to the company of the "grown ups" this is not difficult. They can hardly be said to play at all in the sense that we give to the word, but as they grow up they take part in rat-catching and the rest of the day's work. They are very precocious, and, up to the age of puberty, are often astonishingly intelligent; after puberty, however, they become exceedingly apathetic; sexual excess and continual intoxication by palm-wine contribute largely to this result.

Few Ba-Mbala know any language other than their own; they have a thorough geographical knowledge of their country but are unable to draw maps. Their powers of observation are not great and they are not good trackers.

Their memories are good only so far as the wrongs done by or to their ancestors are concerned; at their *milonga* (palavers; p. 414) crimes committed three generations back are frequently mentioned and remembered by the hearers. As regards arithmetic they are poor; they count generally in fives, and use small pieces of stick to make their meaning plain.

The numerals are as follows:—

1	Mosh.	4	Gwana.	7	Samboeli.	10	Gumi (Kumi).
2	Mbali.	5	Lanu (Tano).	8	Kinana.	20	Makumali.
3	Satu.	6	Sambanu.	9	Libwoa (Livvoa).	100	Kama.

Ordinals are not used. Counting is usually done on the fingers; they talk very freely of a thousand and ten thousand *djimbu,* but if an amount such as fifty beads is mentioned, they ask to see them in order to be able to judge how much it really is. They cannot add, and subtraction can only be managed by means of the fingers, even by people of more than the average intelligence.[1]

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[1] "I tested a man as follows: he brought me six fowls for sale, and I had three removed without his knowledge; I then asked him how many I had to pay for, and he was unable to tell me."

Sticks are used as follows:—for instance, in reckoning time, if one man wishes to make an appointment with another in so many days, he begins, " To-morrow (*Lakela*) you do not come," and lays down a stick, " The day after to-morrow (*Luna*) you don't come," and lays down another. " Then for one day you do not come," laying down another, " For one more day you do not come," and so on, putting aside sticks until the total is reached. When he has finished, the other counts the sticks, adds one, and says, " For so many days I shall sleep and then I shall come and see you."

Here may be inserted a few remarks on the native year. A year is composed of two seasons, the dry, *Kisua*, and the rainy, *Vula* ; the two together are divided into thirteen lunar months, each consisting of seven weeks of four days each. The days are :—*Bujuka*, *Moshila*, *Gundu*, and *Pika* (market-day).

There are no names for the points of the compass, stars, or constellations, nor is any explanation given of the motions of the heavenly bodies, eclipses, earthquakes, etc. The rainbow is called *Kongol-Meme* (water-snake).

No cases of insanity appear.[1]

Writing, strictly, is of course non-existent, but messages can be sent by means of an arrow, on which certain marks have been cut; the latter, however, seem to admit of considerable latitude as regards interpretation; for instance, four notches may mean " Come and see me in four days," or " I shall come and see you in four days," or " Send me four men," etc.

Music.—The Ba-Mbala are fond of music, but in this, as in everything else, they show a conservative spirit, since they sing no foreign songs, only their own. The men have good tenor voices of small compass, the women soprano; both the chest and head voice are used. As a rule singing is unaccompanied by instrumental music, but a native will often sing softly to himself, while playing on one of the only two instruments, besides the drum, which they possess, the " piano " with iron or bamboo keys, *Kimbenda* (Plate XXIX, Fig 1), or the harp, *Sabe.* They seem to enjoy this greatly, and hold the instrument close to the ear in order to " hear more of it." Singing is often in chorus, men and women singing alternate verses, and all joining in together at intervals. The song commences as follows:—

(*Recit.*) A VOICE: Kimbanda, moyo.
CHORUS: Moyo.
A VOICE: Kimbanda, moyo.
CHORUS: Moyo.

Then follows the song, the words of which are invariably of too obscene a character to bear repetition. All the tunes sound solemn in spite of the words, but are very elementary, in fact Ba-Mbala music may be described as rhythmical noise without coherence; as often as not the singers are out of tune. Below is given the music of two songs.

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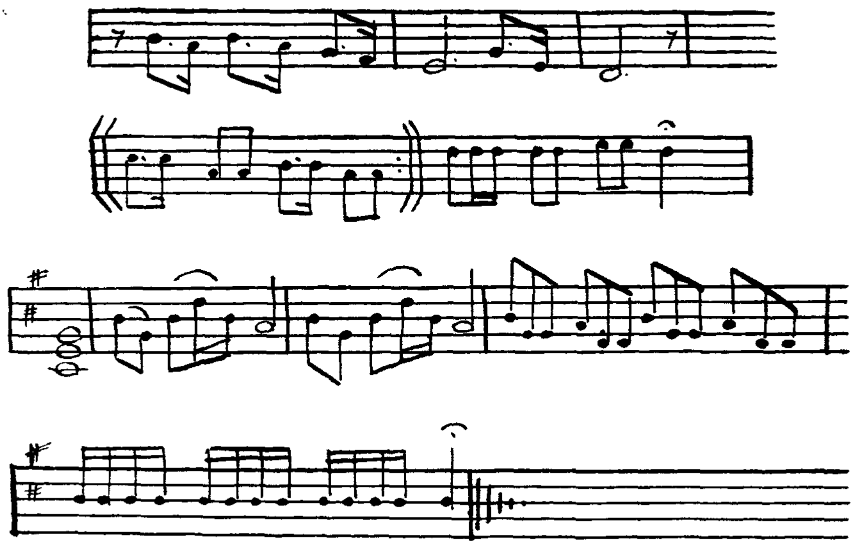
[1] " I know of no case of insanity, but it is possible that the mentally afflicted are put out of the way, in which case Europeans would not be likely to hear of it."



Drums are of wood, and cylindrical, the membrane is formed by a goat-skin stretched over one end; they are used for accompanying the dance. There is also a particularly large pattern, called *Molangi*, which is used in war. Whistles of wood, often with a finger-hole by means of which a second note can be obtained, are used in war and hunting (Plate XXIX, Fig. 2).

JUSTICE.

The administration of justice among the Ba-Mbala may be summed up in the single word *Milonga* (palaver); round this system their whole life centres, and all disputes, whether between two Ba-Mbala or a Mo-Mbala and a member of a neighbouring tribe, are settled by this institution. In explanation of the proceedings a typical case, such as occurs every day in this country, may be given. A, of the village X, steals a goat belonging to B, of the village Y. Under pledge of the greatest secrecy, he boasts to some friend of his feat, and the result is that before the end of the day B knows who the thief is. B then sends a messenger to A asking for *Kama-Kumi*, that is, a few *djimbu*, a little salt, a fowl, or in fact, anything of little value. If A refuses, and this is rarely the case, war is made on his village; if, as usual, he consents, it means that he admits the crime and is willing to accept responsibility for the act. B's next act is to send an arrow to A's chief, marked with a number of incisions indicating the number of days in which the *Milonga* will be held. When the day arrives, not only the whole population of the villages of A and B, but of all the neighbourhood, flock to B's village, all armed with bows and arrows (in this respect custom differs from the proceedings on the Lower Congo), to take part in the trial. There is no judge, but the decision is left to the crowd. Men of noted eloquence speak on behalf of each party, and the discussion begins. A admits that he has stolen the goat, but did not B's grandfather seduce his, A's grandfather's, wife? B allows this, but asserts that his father had a fowl stolen by A's grandfather. A does not deny the offence, but recalls the fact that a pig was stolen from his uncle by a slave of B's grandfather's brother-in-law. And so the case proceeds, the assembly declaring after each charge and counter-charge that the matter is compensated. Eventually he who can bring the greater number of charges against his adversary is declared the winner, and claims compensation. This gives rise to a further discussion; if one demands twenty goats the other offers one, and the argument often lasts several days, but they generally arrive at some agreement at the end of it; on the rare occasions when they cannot come to terms war results. It often happens that the man who demands the *Milonga* loses his suit.

If a goat is stolen from a neighbouring village, pieces of the flesh are sent to the villages allied to the village of the thief; the idea being that if war results, and, consequently, the allies have to run the risk of being killed, it is only fair that they should have had some of the spoil.

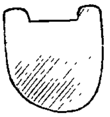
In murder cases each village which has joined the bond described under "Social Organisation" demands the *Kama-Kumi,* and proceeds by means of the *Milonga.* In cases of parricide the *Kama-Kumi* is not asked, but war is declared against the village of the murderer; after several people have been killed,—and the accused need not necessarily be amongst them—a *Milonga* is summoned to decide the question of compensation. The chiefs have no right to interfere at the *Milonga,* and children are punished as well as adults. If the dispute is between members of the same village recourse is usually had to the *Putu,* or poison ordeal.

As general rule every crime except parricide and diabolical possession can be compensated by a fine. An oath is taken by a man rubbing his chest with earth or licking his own arm, but it is of little value.

In this connection a few words may be said concerning general morality; sexual morality has already been discussed, but it may be added that adultery is a purely personal offence. A man who does not treat his slaves well is despised by everyone; avarice is generally disapproved, but there is no law of hospitality towards tribesmen or others. Hemp-smoking is also considered a disgrace, but drunkenness is mentioned with respect as a sign of wealth. Cheating and lying are rather approved than otherwise; cowards are merely laughed at. There is no belief that the gods or spirits punish wrong-doing by afflicting the criminal or his family, nor are the acts of a man supposed to affect his condition after death.

WAR.

War is declared by the commission of an act of hostility, usually consisting in an attack upon a member of the hostile village. Two kinds of war are known—the small war, *Kutana,* and the great war, *Gembi.* For the first a special arena is cleared by burning the grass, but if a man is killed in the ensuing engagement the *Kutana* becomes *Gembi,* which is fought when and where enemies meet. Every male over the age of eight or ten takes part; women hide in the bush. Leadership of a more or less purely formal character is assumed by the chief, if young enough, in the other event by one of his sons. As regards the *Kutana* the warriors, armed solely with bow and arrow, march in single file to the appointed spot; arrived there, they insult each other for some time, and then commence to shoot, sometimes attempting enveloping movements; they show considerable courage and also dexterity in avoiding the arrows of the enemy, and as a rule little harm is the result. The *Gembi* is a far more serious affair, no quarter is given to the wounded, and women and children are killed if caught; ambushes are prepared, and every form of treachery is practised. Each man fights for himself, and does his best to kill any enemy; warfare is of the guerilla type, and the enemy are never allowed a moment's peace. No words of command are used in either form of war.



Section of Bow.

Bows and arrows are of local manufacture, the former are made from a kind of maple, called *Mopelenge,* and are very well carved; the string is pulled by means of the index and middle fingers. Arrows are nocked and feathered (Plate XXVIII, Fig. 8); the heads are not intended to come off in the wound, and no poison is used.

Wooden weapons, the ends sharply pointed and hardened in the fire, are also found, and slivers of bamboo are stuck in the ground to wound the feet of the enemy. Defensive armour is unknown; women have no weapons and do not know their use. Night attacks are made, and during a war no one sleeps in the house, but all are on the alert; the village is guarded by a large number of sentries. The chief causes of war are:—(*a*) breach of the bond against bloodshed; (*b*) refusal to give *Kama-Kumi* when guilty of theft or adultery: in the first case *Gembi* results forthwith. In *Kutana* prisoners are secured by the *Taka,* a heavy stick with a fork at one end, in which the neck is fastened, sometimes they are further fettered by securing one hand to a large log with a hole in it, called *Kalombi.* They can be ransomed, but if the price is not forthcoming they are sometimes eaten. Whistles, similar to those used in hunting, are employed in war (Plate XXIX, Fig. 2).

As regards plunder, everyone takes what he can; there is no such thing as effective conquest, since the Ba-Mbala desire no territory.

Poison Ordeal.

The poison, called *Putu,*[1] used in the poison ordeal is made from the bark of a tree, imported from the mouth of the Kwango. It usually acts very quickly, and in one of three ways, causing death, evacuation, or vomiting; the first is the usual result, and, as well as the second, is taken as a proof of guilt; the third alone establishes innocence. In a dispute either party can propose to take the *Putu,* but the test is most frequently applied in the case of an individual accused of being *Doki, i.e.,* possessed by *Moloki,* the evil spirit, and of being thereby the cause of some one's death. The accusation usually falls on some person who is old and rich, or for some reason unpopular, and men do not hesitate to denounce their nearest relatives.

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[1] The Director of the Royal Botanic Gardens at Kew, to whom a fragment of the bark was submitted for examination, has kindly indentified it as follows: "the sample received for identification is 'sassy' bark (*Erythrophlœum Guiniense*), a full description of which (as *Erythrophlœum Judiciale*) is given in the *Pharmaceutical Journal,* vol. xvi (1856), p. 233."

After the poison is administered the bystanders call *Moloki* for ten or fifteen minutes, the time usually required for the operation of the drug.

Throughout a great part of Ba-Mbala-land the *Putu* is ground into a fine powder-like flour, and mixed with a little water to form a thick paste; from this paste are made five small loaves, each about the size of an almond, which are administered one after the other, accompanied by invocations to *Moloki*. Unless vomiting intervenes, the guilt of the accused is regarded as established. In any case, if there is no result beyond natural evacuation, the person thus declared guilty is made to dig a hole in the ground; he is then given a fowl to eat, and sufficient palm-wine to make him thoroughly intoxicated; after which he is laid, or in some cases goes and lies down, in the hole, and is buried alive. This is done to prevent the *Moloki* escaping with his last breath. On the grave a large fire is kindled which is kept alight for two days; the body is then exhumed and cooked with manioc flour. In the somewhat rare event of an individual being proved innocent, he is decorated with beads and carried about in the village in great triumph for two or three days, and the accuser, unless a witchdoctor, must make him a present of a pig as compensation.

DEATH AND BURIAL.

Every man has a soul; it is invisible and inaudible, but is capable of doing harm; it is continually wandering about in the form of some animal, and if this animal is killed the owner of the soul dies. Another cause of death is the *Moloki*, which for convenience of expression may be translated "devil." Possession by *Moloki* is frequent, and the possessed uses his power for the destruction of others. (See later under RELIGION.) After every natural death an accusation of being possessed by *Moloki* is brought against someone, usually elderly, who is forced to undergo the poison ordeal. Accusations of this kind are very frequent, and a man will often accuse his parents or his brother. When a man dies the body is, at first, deserted by everyone; later it is stretched out, painted with white clay, and exposed for several days, finally it is wrapped in cloths and buried in the earth with the feet to the east.

Women lament for several days over the dead, and guns are fired to keep off the *Moloki*.

Near relations and people who have nothing to do take part in the burial. A goat is killed and half of it is buried with the corpse, the rest is eaten. It seems probable that in former times the victim was a slave. As the soul does not eat, the burial of part of the victim with the body is simply a mark of respect. Pots are broken on the grave, and a semi-cylindrical hut, 2·20 m. long by 75 cm. high, is erected over it (Plate XXIX, Fig. 7).

Next follows a period of mourning, during which the inhabitants forsake the village and sleep in the open: women paint themselves with brown clay as a sign of mourning, men with soot; the hair is allowed to grow and is not shaved again until the number of parasites render this necessary. The soul after death is supposed to wander about, and, if the grave is neglected, to disturb, or even cause the death of, the relations. If satisfied about the condition of its grave, it takes the form of some animal, that of a chief of a large beast, those of the rest, of animals corresponding in size to the importance of the deceased. Children before puberty have no soul, neither have plants, food or weapons. The name for soul is *Mityima*, the same word as is used for "heart"; besides entering animals, souls also wander about in the air; they are indestructible. Ghosts return and seize people by the throat (nightmare). Burial customs are the same in all cases, no matter what the rank or sex of the deceased. No one is refused burial. The dead are soon forgotten.

Religion.

If questioned on the subject, the Ba-Mbala admit the existence of a supreme being whom they call *Zambi*, but no one takes any notice of him; it seems almost certain that he is an imported deity and has been borrowed from the Ba-Kongo. An interesting light is thrown on this point by the following fact: in the interior, where a knowledge of Ki-Kongo is found, the phrase is often heard, "I will come when *Zambi* is dead," the word in this case meaning the sun. Now the people from whom they acquired their knowledge of Kikongo, in speaking of *Zambi*, must have pointed to the sky, and the Ba-Mbala, seeing nothing but the sun there, naturally formed the erroneous conclusion that the sun was meant. At any rate there is not the very slightest trace of sun-worship.

The true native "god" is a malevolent being named *Moloki*, who is in fact "*ein Geist der stets verneint*," and all respect is paid to him. He is omnipresent, but is wont to select as his particular abode the body of some old man, rich for preference, or some old woman who possesses an evil tongue, and to his agency natural deaths are attributed.

It is very difficult to get the natives to speak at all about *Moloki*, and, further, to arrive at any very clear idea about him when they do. It seems a little uncertain whether he is regarded as one or many; he is usually mentioned in the singular, yet we find the *Doki*, as the person possessed by the *Moloki* is called, being buried alive in order that the *Moloki* may not escape with the last breath, a fact which would seem to imply that there was more than one. The *Doki* is attributed with various reasons for exercising his fatal power; it may be that he has some wrong to avenge or he may think that a child is too intelligent, or, again, it may be from pure malevolence. In any case he proceeds to carry out his nefarious plan as follows: he steals the *Mityima* ("heart" or "soul"—for belief concerning this, see above under Death and Burial) of his victim, who is quite unconscious of the loss, and puts it into a goat, the goat's "heart" he puts into the man, and as a man cannot live with a goat's "heart," the victim dies; the goat, however, continues to live. Sometimes the *Doki* binds the *Mityima* he has stolen to a tree, where it is invisible, and waits for the ants to come and eat it, in which case the victim dies; if for some cause the ants leave it alone, he is saved. A curious story is that sometimes the *Doki* preys upon the hand or foot of his victim, and the member so attacked falls off. This may refer to cases of leprosy which do occur among the natives in the interior.

Magicians vary in importance, and also their prices in direct ratio; there is the "country practitioner," who is content with a moderate fee, and also the "west-end specialist," whose prices are enormous; for an unimportant piece of magic his fee is 1,000 *djimbu,* but when he comes with his big fetishes it is three or four times that amount. The great magician among the Ba-Mbala, a man of wide reputation, is Mwana N'Gombe; *Mwana* = "the child," and *N'Gombe* is the name he gives to his three great amulets. These are: (*a*) a *Mwena* bracelet; (*b*) an axe also called *Mwena*; and (*c*) his head-dress, a piece of cloth in which certain fetish compounds of extra special power are kept; it is ornamented with cowries, and he is not allowed to see it, or his death would instantly and inevitably result; for this reason he is never allowed to look in a mirror. Mwana N'Gombe is a good-looking and intelligent man; if called by his name, he replies "*Gale,*" a word the meaning of which is a great secret and is known to no one. When he laughs he hisses loudly between his teeth, a performance which greatly impresses the natives.

Fetishes are carved from wood, but receive their power from the *Kissi* applied by the magician; this *Kissi* is composed of clay or earth which he has inherited from his predecessors. Mwana N'Gombe received his from his uncle, and when he dies will leave it to the son of his eldest sister. He claims to be the inspired servant of his *Kissi,* and alleges that when divining he does not know what he says, the *Kissi* speaks through him. He treats sick persons by the application of charms: for instance, if a man has a pain in his side he takes a goat's rib, and binds it against the part where the pain is felt; the rib is then supposed to draw all the sickness from the spot affected. To show the method of divination it will be best to take a concrete instance: a child dies of, say, over-eating; the fatality is immediately attributed to the malign influence of *Moloki* acting through some possessed person. An important witch-doctor is summoned, and the conjuring begins. He sets up his two great fetishes in the middle of the circle of onlookers, and begins to question them in a low voice, the bystanders accompanying him in a very subdued chorus. These fetishes consist of two wooden figures, male and female, on which he has put his *Kissi,* and the length of the consultation depends on the amount of the fee, for he does not give more than the money's worth.

"No, he did not die of snake-bite. No, it was not his mother who killed him," and so forth, until at last the witch-doctor begins to shiver: "I see an old man, with a white beard, living in this village, wearing a brass ring on his left great toe, who is possessed of *Moloki*: he it is who has caused the child's death!" The old man in question, who is guilty of no other crime than wealth and long life, at once protests his innocence, and offers to take the *Putu* in proof of his assertion, and this is administered in the usual way (p. 416).

Every family possesses *Kissi* which has been inherited, and this is used in several ways. For instance, a creditor makes a line with it on the arm of a man who owes him a debt, and the *Konzi,* as the line is called, may not be removed until the debt is discharged, and, until this be done, the debtor cannot hope for prosperity. More than this, the debtor will make no attempt to efface the *Konzi,* but will try his best to raise the money to pay what he owes.[1] Crystal-gazing and the divining-rod are unknown. Some chiefs retire to drink, being unwilling that anyone should see them.

REPRODUCTION.

Males have intercourse at the age of about ten years, the age of puberty; girls, from the age of six or seven, before menstruation; the position adopted is usually side by side. There is no special season of the year for marriages. Men abstain from their wives during pregnancy. There are no means of saving the child if the mother dies in childbirth. The child is suckled about eighteen months, sometimes by women other than the mother, but solid food is given when the child is four months old. The method is as follows: the child is placed upwards in the mother's lap, and a small quantity of *Kato* (see FOOD) is pushed into its mouth; the child usually protests vigorously and tries not to swallow it, but is compelled to do so by having more crammed into its mouth.

Monsters and cripples are buried alive, but there is no special treatment for twins. A woman usually has three or four children. The kola-nut is used as an aphrodisiac, and sterility is rare; a sterile man is called *Mokobo*; a sterile woman *Wafa Kisita.* Causes tending to keep down the population are war and cannibalism.

MEDICINE AND SURGERY.

The ordinary complaints are bronchitis, fever, and syphilis; elephantiasis and leprosy are known. Diseases are supposed to be cured by the use of charms. Wounds heal readily; they are treated by the application of certain herbs, the knowledge of which seems confined to a few old people, who also know how to set a broken arm or leg; blood-poisoning is rare. Bleeding by cupping is the most common remedy, and is of universal application; small gourds are used, from which the air is exhausted by suction through a small hole at the top, which is then stopped up. Infection with syphilis is not punished in any way. The pulse is said to be a nerve and is not connected in any way with the heart or the soul.

ABNORMALITIES.

Albinos exist, but are not treated differently in any way from the normal native; spotted individuals also occur, and red hair is not unknown.[2] Hare-lip, cleft palate, tongue or cheek, deformities of the extremities and steatopygia, appear to be unknown.

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[1] "A striking instance of the superstitious regard for the *Konzi* came under my personal notice; a man put the *Konzi* on the door of the hut of an enemy in a village at a considerable distance from his own. Since that time, every death in that village was attributed to the influence of the *Konzi.* I made his son remove it, and for this service he received a present of ten goats."

[2] "I have heard of a boy, about ten years old, who, though black, had red hair and brown eyes; he was accused of being possessed by *Moloki* and killed."

LANGUAGE.

The language of the Ba-Mbala is very elementary; there is practically no grammar, and the sentence is little more than a mere agglomeration of words. Below is appended a short vocabulary, which will be found to vary in some small respects from that published in *Man*, 1905, 75. The difference is explained by the fact that the latter was collected on the Kwilu, in the north of the Ba-Mbala territory, where the neighbourhood of the Ba-Yanzi and Ba-Huana has had a considerable influence upon the Ba-Mbala dialect; the vocabulary given herewith was obtained further south, in the interior of Ba-Mbala-land. It may be added that there is a word expressing affirmation, *Do;* if a man is asked, *Wei Zako Lo?* "Are you not coming?" he will reply, *Zako Do*, "Yes, I am coming." If he were not, he would reply, simply, "Yes," meaning "Yes, I am *not* coming."

VOCABULARY.

Personal Appellations.

Ancestor, *kake.*
Aunt, paternal, *tata.*
Brother, *makuni.*
Chief, *fumu.*
Child, *mwana.*
Cousin, *kisoniki.*
Drunkard, *kufula-makana.*
Father, *tata.*
Father-in-law, *ukwa.*
Friend, *bai, futer.*
Infant, *mwazi-mwazi.*
Insulting expressions, *fokoy, inzai, kimbundu gamei, kong, mobaremei.*
Man, *mutu.*
Mother, *mei.*
Mother-in-law, *ukwa.*
Nephew, *mokakana.*
Rebel, *mayuma.*
Sister, *pangi.*
Slave, *mwika.*
Thief, *mwima.*
Uncle, paternal, *gwass.*
Uncle, maternal, *lembe.*
Woman, *mokosoma.*

The Body.

Anus, *moshishi.*
Bone, *ikuri.*
Breast (of woman) *mari.*
Buttocks, *matako.*
Calf, *dombola.*
Chest, *kingongo.*
Clitoris, *momburi,*
Ear, *n'jwe.*
Eye, *meso.*
Eyebrows, *kiki.*
Eyelashes, *konge.*
Fæces, *duji.*
Fingers, *dembe.*
Foot, *mile.*
Gleet, *kikangala.*
Hair (of body), *maka*; (of head), *dupu.*
Hand, *miyoko.*
Head, *mutu.*
Heart, *mityima.*
Hunger, *pai.*

Leg, *mikulu.*
Mouth, *kanu.*
Navel, *djimba.*
Neck, *kota.*
Nose, *mozulu.*
Palm, *pape koko.*
Penis, *inzai.*
Rib, *sakati.*
Shoulder, *yambande.*
Skin, *pela.*
Sleep, *tulu.*
Smallpox, *matuba.*
Syphilis, *makwanda.*
Testicle, *makuta.*
Thirst, *pwiza.*
Tongue, *limi.*
Tooth, *mazu.*
Vagina, *bundu.*

Weapons, Utensils, and the House.

Arrow, *betutu*; wooden-pointed, *tomo*; iron-pointed, *mivi*; four-pointed, *kikashi.*
Bag, *godi.*
Basket, *kisangi*; square-based, *mahapa*; -lid, *bango*; -base, *muteke.*
Bead, *misanga.*
Beam, *mokambo.*
Belt, *mokamina.*
Bottle, *bungu.*
Bow, *buta*; button at end of, *kimbundu*; string, *lokako.*
Box, *mokobe.*
Cage, *n'gunzu.*
Cloth, native, *kipussu*; imported, *molele.*
Door, *towale.*
Fetter, for hand, *kalombi.*
Fork, for prisoners, *taka.*
Gong, war, *molangi*; dance, *gomo.*
Gourd, *mundele.*
Granary, *kiango.*
Hat, *jepi.*
Hoe, *demo.*
House, *n'zo.*
Knife, *poko.*
Mat, *lizana.*
Mortar, *mushi.*
Pipe, bamboo, *fangu*; European shape, *kinzu*; gourd, *motobo.*
Pot, *dzungu.*
Roof, *yange.*
Sieve, *muswalu.*
Snare (for birds), *muhetu.*
Thatch, *bamba.*
Village, *m'bo.*

The Animal World.

Animal, *situ.*
Ant, *tumwena.*
Antelope, *bambi.*
Bat, *miswuese*; large, *gonzu.*
Bird, *nyuni*; small, *gunda.*
Boar, wild, *sumbu.*
Buffalo, *natyi.*
Chameleon, *yokniyi.*
Dog, *m'boa.*
Eagle, *lokoli.*
Egg, *maki.*
Eggs, *makiri.*
Elephant, *dzoko.*
Falcon, *kokori.*
Feather, *sala.*
Fish, *ashi.*
Fowl, *kok, susu.*
Goat, *kombo.*
Goliath beetle, *gombo.*
Grass-hopper, *passa*; large, *moyei.*
Guinea-fowl, *kanga.*
Guinea-fowls, *akanga.*
Hippopotamus, *gufu.*
Honey, *buik.*

Horn, *lubongo.*
Kite, *imbi.*
Leopard, *koy.*
Lion, *tambo.*
Louse, *anzenga.*
Milk, *mari.*
Monkey, *kima.*
Parrot, *kusu*; small, green, with red head, *kirinkusu.*
Partridge, *kwali.*
Pig, *gulu.*
Pigeon, domestic, *mayembe*; green, *gundundu*; grey, *mayembe.*
Rat, *puku.*
Various kinds of rat, *banga, belele, kakala, kashingi, kibengi, kilima, kitupi, moebo, pali, sabila, shinji, tanga, vuinda, zwanga.*
Screech-owl, *kikungulu.*
Snake, *nyoka.*
Turtle-dove, *bembe.*

The Vegetable Kingdom.

Banana, *tichipi.*
Bean, *makundu.*
Brushwood, *miti.*
Capsicum, *dungu.*
Forest, *misiti.*
Grass (for thatch), *bamba.*
Ground-nut, *n'zuku.*
Maize, *masa.*
Manioc, *soko.*
Mushroom, *boko.*
Palm-tree, *m'ba*; -nut, *m'ba*; -wine, *makana.*
Pepper, *kef.*
Pineapple, *iba.*
Pineapples, *biba.*
Plantain, *mipindi.*
Sweet-potato, *mato-na-singa, sengesenge*; red, *kata n'donge.*
Timber, for building, *makunda*; small, *ile.*
Tobacco, *magaya*; for snuffing, *fuma.*
Wood, *midono.*
Yam, *kusu-m'bongo.*

Time, the Elements, and Geography.

Air, *funji.*
Clay, *humi, pembe.*
Day, *mafuku.*
Days of the week, *bujuka, moshila, gundu, pika* (market day.)
Day after to-morrow, *luna*; day before yesterday, *besukulwari.*
Earth, *toto.*
Evening, *pimpa.*
Fire, *bao.*
Forest, *misiti.*
Iron, *dondo.*
Lightning, *dzaji.*
Marsh, *muchipi-chipi.*
Moon, *gonde.*
Mountain, *mosele.*
Night, *ofuku.*
Plain, *demo.*
Rainbow, *kongol-meme.*
Road, *boka.*
Sand, *mana.*
Season, dry, *kisua*; rainy, *vula.*
Star, *mieto.*
Stream, *mokele.*
Sun, *mwano.*
Time, *sumbu.*
To-day, *mwana.*
To-morrow, *lakela.*
Water, *memo.*
Week, *pika.*
Wind, *funji.*
World, *kifutu.*

Verbs.

Angry, be, *kuwa kabu.*
Be, *wene*; I am here, *ami wena ha.*
Beat down, *kubwisa.*
Bind, *kukanga.*
Boil (v.a.) *kulamba.*
Bring, *zotwale.*
Bring forth, *kowala.*
Call, *kolendika.*
Carry, *kusenda.*
Castrate, *kotota.*
Choose, *kozola.*
Come, *zako.*
Copulate, *kolakana.*
Crush, *kututa.*
Cry, *kwakala.*
Cut, *kuvuka.*
Discuss, *koza milonga.*
Dispute, *kunuana.*
Draw (the bow), *kokwasa.*
Drink, *kunia.*
Enter, *kwingila.*
Fight, *kumana.*
Flee, *kutina.*
Fly away, *kuvulumuka.*
Forget, *kujimbala.*
Give, *kufuta*, *kupeza.*
Go, *kwende.*
Have (I, we, have), *kweti*; (thou hast, he has, you, they, have), *kukete.*
Hear, *kuiva.*
Hunt, *kwenda kongo.*
Impregnate, *kufula.*
Ill, be, *kwinza.*
Jump, *kusanguluka.*
Kill, *kujia.*
Laugh, *kusea.*
Leave, *kweka.*
Lie, *kufuta.*
Lie down, *kumoka.*
Love, *kuzola.*
Mad, be, *kwinza lach.*
Mock, *kutuka.*
Pay, *simbika.*
Pick up, *kotola.*
Pursue, *mulabi.*
Return (v.n.), *kindingisa.*
Remain, *kubika.*
Ride, *kunene.*
Say, *kwambala.*
Seize, *mokomoho.*
Send, *kutumisa.*
Sew, *kunuka.*
Share, *lukaba.*
Silent, be, *kuluka.*
Sing, *kutuba mokungo.*
Sit, *kubashi.*
Smell, *kisulu.*
Smoke, *kunya makaia.*
Sleep, *kubita.*
Speak, *kwakula.*
Steal, *kwimbula.*
Strike, *kubula.*
Swim, *kokasa.*
Take, *senda.*
Throw, *wimbila.*
Tired, be, *kwela.*
Travel, *kukiba.*
Truth, to speak, *mopala lo.*
Urinate, *kusuba.*
Wait, *kuluka.*
Walk, *tambala.*
Wish, *kuzola.*
Work, *kuzala.*
Wound, *kulemena.*

Pronouns, Adjectives, Adverbs, etc.

Above, *na vulu.*
All, *akima.*
Alone, *mwene.*
At once, *tangri.*
Beautiful, *oketyi.*
Below, *na machin.*
Between (two), *kati-kati.*
Bitter, *ganyi.*
Black, *kubumbula.*
Brave, *woma-lo.*
Castrated, *tongo.*
Cold, *pio.*
Drunken, *kufula-makana.*
Far, *kutari.*
Fat, *maji.*
Fierce, *kabu.*
Good, *pimbo.*
Great, *monene.*
He, *yandi.*
Here, *ha.*
I, *ami.*
Late, *makirolo.*
Little (adverb), *kijigi-jigi.*
Long, *inda.*
Male, *bakala, molüme, yala.*
Much, *ingi-ingi*; very, *vula-vula.*
Near, *hei-hei.*
No, *lo.*
Old, *butakuna*; very, *nunu.*
Quickly, *makiri, tsina-tsina.*
Red, *kubabala.*
Satisfied, *kukumbusa.*
Slowly, *tokoki-tokoki.*
Small, *mwazi-mwazi.*
Soft, *yeke-yeke.*
Soon, *kele-kele.*
Sterile (man), *mokobo*; (woman), *wafa-kisita.*
Strong, *golo.*
Sweet, *yeke.*
There, *ko.*
They, *bao.*
This, *yei.*
Thou, *ei.*
Too, *kuina.*[1]
Very, *bona.*
We, *betu.*
Where, *kwi.*
White, *kukubuka.*
Wicked, *kabu, ganji.*
Yes, *he.*
You, *benu.*
Young, *kalenge.*

Number.

One, *mosh* (*mosi*).
Two, *mbali* (*mbari*).
Three, *satu* (*tatu*).
Four, *gwana.*
Five, *lanu* (*tano.*)
Six, *sambanu.*
Seven, *samboeli.*
Eight, *kinana.*
Nine, *libwoa* (*livvoa*).
Ten, *kumi* (*gumi*).
Twenty, *makumali* (*makumari*).
Thirty, *makumi-satu.*
A hundred, *kama.*
A thousand, *funda.*
How much, *mukwa.*

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[1] Only used with adjectives implying evil.

Miscellaneous.

Bewitchment, *konzi.*
Currency, shell, *djimbu*; iron ingot, *kimburi*; brass rod, *monengo.*
Evil spirit, *moloki.*
Faith, *madyafu.*
Fear, *woma.*
Fetish, *kiluba, kissi, konzi.*
Hunt, *kongo.*
Market, *pika.*
Present, *mokwala.*
Salutation, "*Moyo.*"
Skirmish, *kutana.*
Song, *mokungo.*
War, *gembi.*

Journal of the Anthropological Institute, Vol. XXXV, 1905, *Plate XXVIII.*

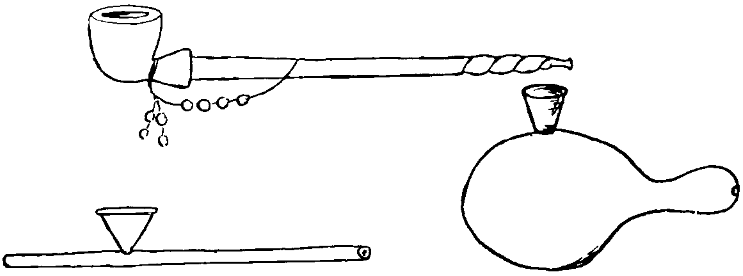


FIG. 1.—TYPES OF PIPE (p. 405).

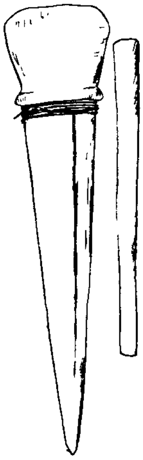


FIG. 2.—WOODEN MORTAR FOR GRINDING SNUFF (p. 405). L. 350 mm.

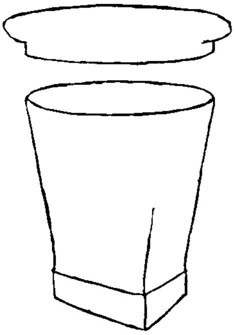


FIG. 4.—BASKET (p. 406).

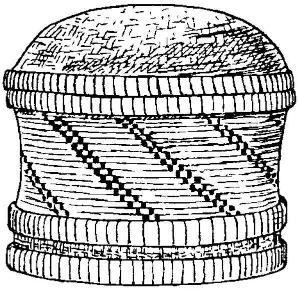


FIG. 5.—SMALL BASKET-PURSE (p. 406). Diam. 80 mm.

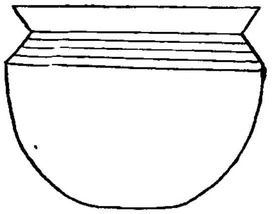


FIG. 3.—POT (pp. 403, 406).

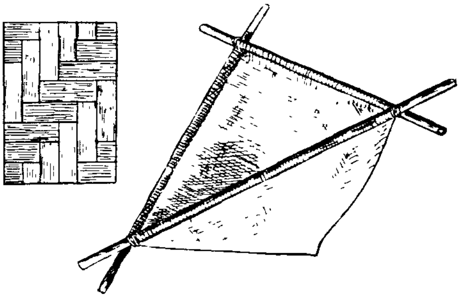


FIG. 6.—FOOD-BASKET (p. 406). Length of side 345 mm.

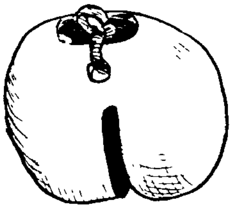


FIG. 7.—WOODEN RATTLE ATTACHED TO DOGS WHEN HUNTING (pp. 404, 406). Diam. 67 mm.

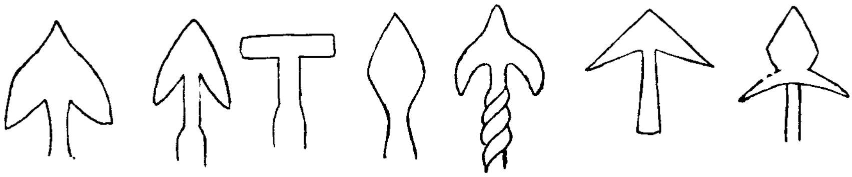


FIG. 8.—TYPES OF ARROW-HEAD (pp. 405, 416).

NOTES ON THE ETHNOGRAPHY OF THE BA-MBALA.

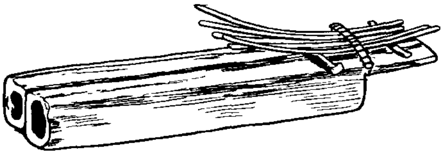


FIG. 1.—PIANO WITH SOUNDING BOARD OF PALM LEAF RIBS (p. 413). L. 244 mm.

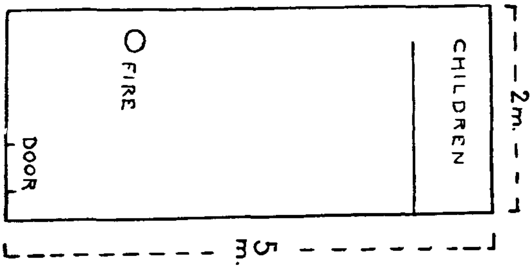


FIG. 3.—PLAN OF HOUSE (p 407).

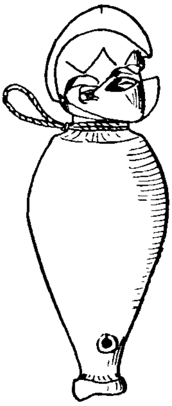


FIG. 2.—WHISTLE. (Blown from the lower end) showing finger-hole by means of which a second note is obtained (pp. 406, 414, 416). L. 150 mm.

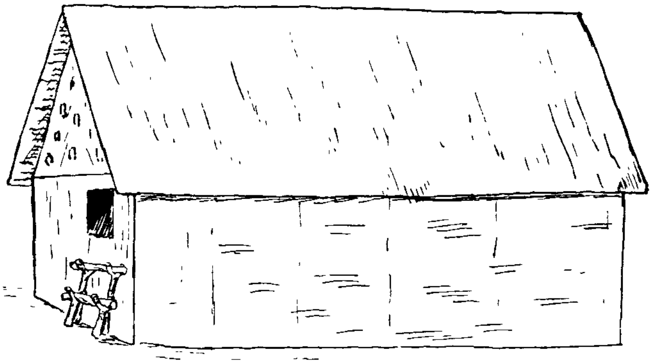


FIG. 4.—HOUSE (p. 407)

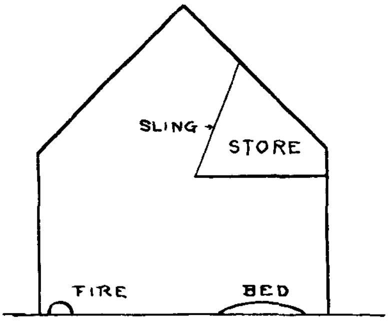


FIG. 5.—SECTION OF HOUSE (p. 407).

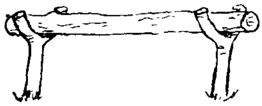


FIG. 6.—ENLARGED DRAWING OF STEP (p. 407).

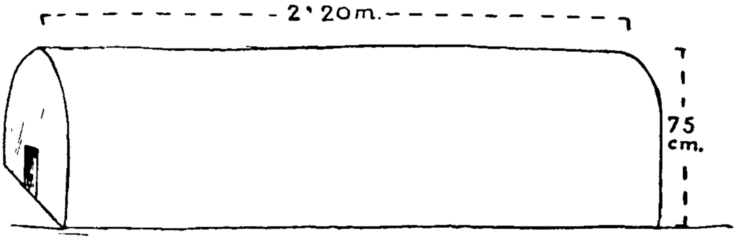
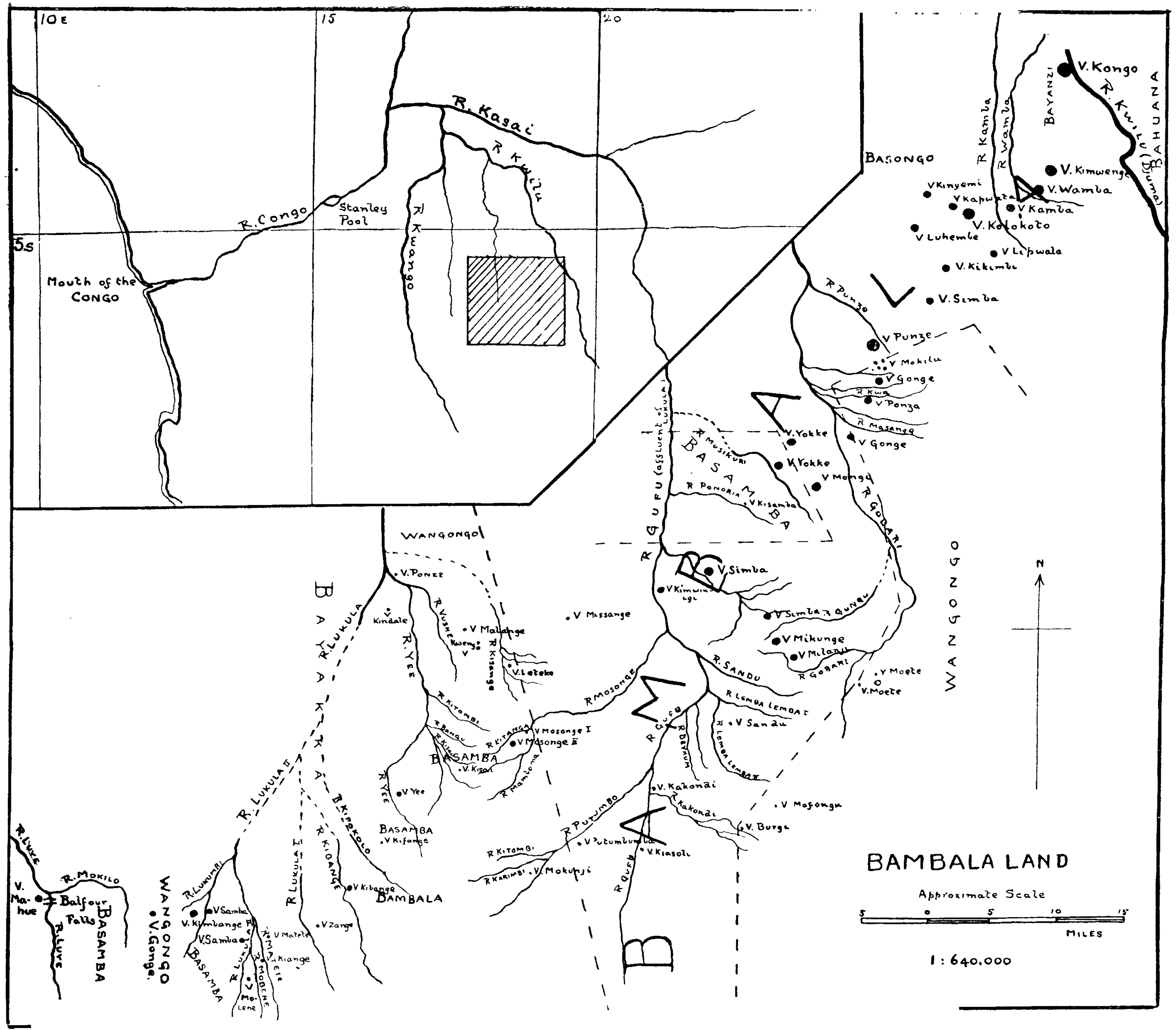


FIG. 7.—GRAVE-HUT (p. 417).

NOTES ON THE ETHNOGRAPHY OF THE BA-MBALA.

Journal of the Anthropological Institute, Vol. XXXV, 1905, *Plate XXX.*



NOTES ON THE ETHNOGRAPHY OF THE BA-MBALA.
(NOTE.—v. = village.)

PREHISTORIC REMAINS IN CORNWALL.

PART 2.—WEST CORNWALL.

BY A. L. LEWIS, F.C.A.

So long ago as the year 1895 I was permitted to place before the Anthropologica Institute a paper on "Prehistoric Remains in Cornwall, Part 1, East Cornwall," a title which certainly implied that Part 2, West Cornwall, might be expected to follow. The prehistoric remains of West Cornwall, being for the most part more easy of access than those of East Cornwall, are much better known and have been more frequently described, so that the remarks I shall have to make upon them will be principally in reference to points which have been

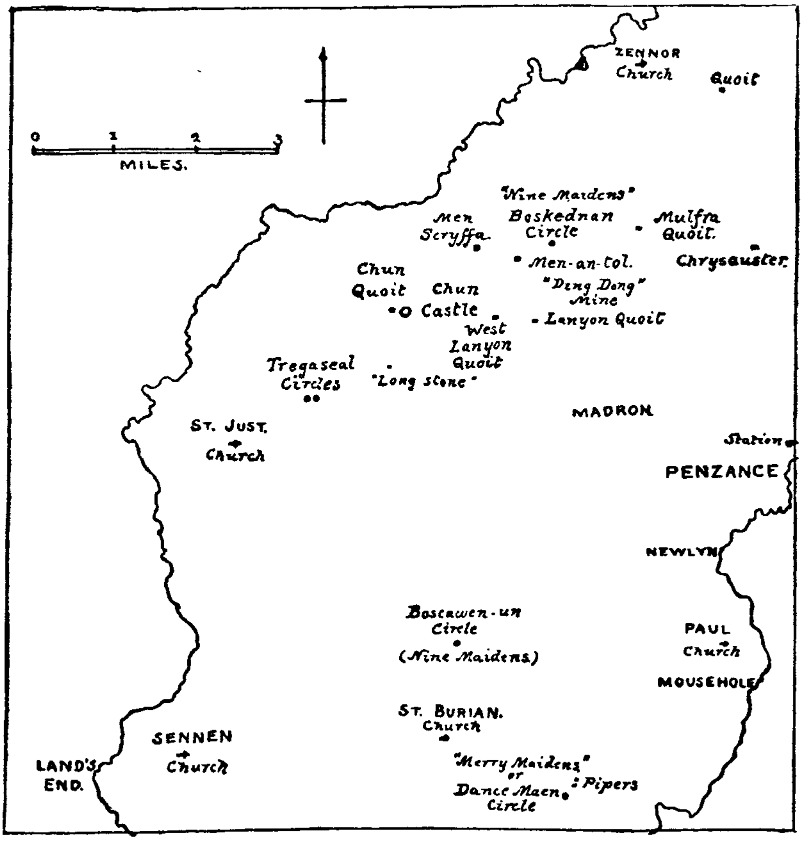


FIG. 1.—MAP OF WEST CORNWALL, SHOWING POSITIONS OF THE PREHISTORIC REMAINS.

passed over by previous writers, but a certain amount of description will be necessary even for that purpose.

The best known, though by no means the largest circle in Cornwall, is DANCE MAEN, or DAWNS MAEN, five miles west from Penzance. Its diameter is about 76 feet, and it consists at present of nineteen stones, but there is a gap in the eastern side, where another stone may have stood, or which may have been intended as a special entrance; the stones vary from 3¼ to 4½ feet in height, and their width and thickness are in approximate proportion. Mr. Edmonds in his *Land's-End District,* published in 1862, said that three of the nineteen stones were fallen; these, however, were set up again before my first visit in 1869, and have apparently remained upright ever since, but, as the field in which the circle stands has been under cultivation for many years, it is not unlikely that some of the stones have been slightly shifted from time to time, and that the irregularity of the intervals between them, and some differences between the measurements of Mr. Lukis, Mr. Tregelles, and myself may be accounted for in that way. This circle is also called the "Merry Maidens," on account of a tradition that the stones were girls who were turned into stone pillars for dancing on Sunday, and two monoliths, 15 and 13 feet high, which stand 317 feet apart, the nearest being 1050 feet, and 40 degrees east of north from the circle, are called the "Pipers." According to the 6-inch ordnance map a line drawn through these stones would pass outside the north-western quarter of the circle, but Mr. Tregelles, after careful examination, thought they were in line with its centre, but, as it is not certain whether either of them could ever have been seen from the circle, it might be doubted whether there were any real connection between them, but for the tradition which I have mentioned. Another stone 9 feet high, called the Goon Rith or Longstone, is at very nearly the same distance from the circle as the "Pipers," but is 9 degrees south of west and plainly visible from it; 196½ feet

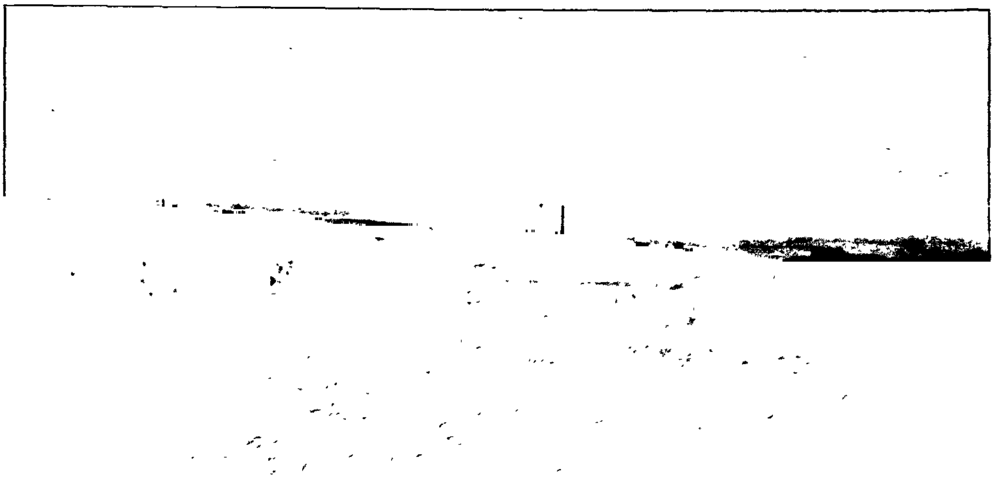


FIG. 2.—"DANCE MAEN," LOOKING NORTH, FROM A PHOTOGRAPH BY MR. J. B. PENGELLY.

and 8 degrees west of north from the nearest stone of the circle is a stone 5 feet 4 inches high, with a hole 5¼ inches in diameter through the upper part of it; this stone is now used as a gate-post, and may perhaps not now occupy its original position. On the other side of the circle, slightly east of south, and about 49 feet away from its circumference, are two stones lying in the field, similar in size to those composing the circle; these probably stood upright originally, and formed an entrance, or, it may be, part of an avenue leading up to the circle, as there are other stones further away in nearly the same direction; these two stones were there in 1869, 1891, and in 1898, but have not been previously noticed, so far as I know, and I was informed in 1891 that, although the circle was protected, these stones were not; still, it can hardly be doubted that they were connected with the circle, as they lie in a well-proportioned position—16 to 17 feet apart, and just three times that distance from the circle, so as to form a suitable entrance to it. In 1869 there was also a small stone lying against a wall about 120 feet north-east from the circle, in the direction of the "Pipers," which might have formed part of the system. Mr. Lukis says of the "Pipers" and "Goon Rith" stone that they and five barrows in the immediate vicinity "imply a necropolis," but that, although the ground round these stones has been dug into, no traces of interment have been found.

An old stonebreaker, who told me in 1898 that he had been in the place for seventy years, said he knew a man who had dug against one of the "Pipers" and found a potfull of ashes; this, if true, was evidently not known to Messrs. Borlase and Lukis, but one potfull of ashes does not make much of a "necropolis." The same old man said with regard to the holed stone, that it had been moved from its original position, where it had stood in connection with another holed stone, and that when the sun shone through the holes in some particular way "they called it Midsummer"; this may be only a repetition of something said by modern visitors, but it may, on the other hand, be an echo of an old tradition, so it is perhaps worth recording.[1]

The "NINE MAIDENS" circle at BOSCAWEN-UN is about four miles and a half from Penzance, to the south of the Land's-End road, and about three miles north-west from "Dance Maen" circle. It consists of nineteen stones, at an average distance of about 11 feet, with a gap on the west, which may or may not have been occupied by another stone; its diameters are 82–83 feet from north-west to south-east, and 71–72 feet from north-east to south-west. On a line running from south-west to north-east, through the centre, there is within the circle a stone, south-west from the centre, but leaning 3 feet towards it, and pointing as it were to some fallen stones lying across the circumference of the circle at the north-east, which some have thought to be the remains of a dolmen, but which others, including myself, have thought to be the remains of another stone, which probably stood inside the circle at the north-east, matching that which still stands or leans at the south-west. "416 yards away on the north-east," says Mr. Tregelles,[1] "is a menhir, 8 feet high, standing on the moor, marked on the 6-inch ordnance map as 'Stone cross,' it would, if the hedges were removed, be visible from the circle. In a lane leading from the farm to the road is another menhir, 10 feet high, and 690 yards north-east of the circle, but not visible from it. A line drawn through the two menhirs would pass to the north of the circle." In a letter to me, dated October 10th, 1893, he says:—"the menhirs there, although running in the right direction, are not in line with the circle; there is another menhir on the east-south-east of the circle, which I omitted to mention, and this is plainly visible from the circle." I may point out, however, that in this circle the reference to the north-east is made by the leaning stone and possibly by the fallen stone inside the ring, and does not depend upon the menhirs outside mentioned by Mr. Tregelles. Miss Elizabeth Carne, the owner of this circle, caused a trench to be dug through it in or about 1862, but nothing was found—a not uncommon experience, which tends to show that these circles were not sepulchral. Someone who has examined the foundations of the leaning stone has stated that its slope is not accidental, but was specially arranged. One of the stones of the circle is a mass of white quartz; it is at the south-west.

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[1] Since this paper was read Sir Norman Lockyer has published an account of some investigations made by him at Dance Maen (*Nature*, February 15th, 1906). He was permitted to have a gap made in the wall between the circle and the "Pipers," but found that although the "Pipers" were in line with the circle, neither of them was visible from it.

LANYON QUOIT (4½ miles north-west from Penzance) is popularly better known than any other Cornish antiquity, because it is a favourite object for photographers, but, as it was blown down in 1815, and set up again in 1824, without any attempt to place its stones in their original position, it cannot be regarded as a representative of any type of monument, or of any value from a purely archæological point of view. It consists of a capstone 16½ feet by 9 feet, supported by three stones about 5 feet high; these however were originally 7 feet high; three other stones lie flat on the ground, which may have formed with the others, part of the walls of a chamber. Mr. Llewellyn Jewitt says an interment was found in the ground underneath this monument in the middle of the eighteenth century (*Long Ago*, March, 1874).

A little way from this monument are three stones known as West Lanyon Quoit. Up to 1790 these were buried in a mound, from which nearly one hundred cart-loads of earth were removed before the stones were discovered: under them were found an urn and some bones broken. Of the three stones, one, 13½ feet long, and from 7 to 9½ feet wide, leans against a standing stone 5½ feet high and broad, the third is a stump 18 inches high, which however helps to support the leaning stone. Mr. Llewellyn Jewitt says in the article already mentioned that the standing stone was the south end of a chamber of which the two side stones 10½ and 9 feet long, with another to make the second up to 10½, were there, but that the north end was open; the sides of the chamber had disappeared before my visit and it seems doubtful whether the great stone was ever placed on the others as a capstone.

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[1] "The Stone Circles of Cornwall," by G. F. Tregelles, *Penzance Natural History and Antiquarian Society's Transactions*, 1893–4.

CHUN QUOIT is another sepulchral chamber a little more than a mile from West Lanyon; it is still partly buried in a cairn, and consists of four upright stones supporting a cover, and is about 5 feet high and square inside; the interior is half full of small loose stones, which appear to have formed a dry walling up of an entrance between two of the larger stones, after this wall was pushed into the chamber the larger stones slipped a little and closed up the entrance. On the top of a hill near is CHUN CASTLE, a double circular wall of loose stones, with the remains of some cross divisions between, which probably formed dwellings and storehouses. Mr. Edmonds has remarked that Chun Quoit and Castle and Lanyon and West Lanyon Quoits are nearly in a line east and west, but I do not think that any importance is to be attached to this.

At Tregaseal, near St. Just, six miles west-north-west from Penzance, are the remains of two circles, about due east and west from each other, called the "Nine Maidens," or, according to Dr. Borlase, the Tregaseal Dancing Stones, the centres of which are about 145 feet, and the circumferences 70 feet apart from each other. The western circle is almost destroyed, and four stones of it are embedded in a fence which separates it from the eastern circle; its diameter, according to Mr. Lukis, was 72½ feet, but, so far as I can judge from his own plan, it seems more likely to have been between 77 and 78 feet. The eastern circle consisted, when I measured it in 1869, of nine upright and four fallen stones; Mr. Lukis, who planned it in 1879, found the same number of stones, but, during the interval, one stone that I found standing had fallen, and one that I found fallen had been set up again; Mr. Tregelles in 1893, found only eight stones standing and five fallen, which agrees with my own notes of a second visit in 1891, but on a third visit in 1898 one of the fallen stones had disappeared altogether, and, when Mr. Tregelles measured the circle again in 1902, the last stone left standing on its eastern side had fallen. These dilapidations and restorations make it difficult to ascertain the original diameter; Mr. Lukis said it was 65 feet, but it is in fact 69 feet, in at least one direction if not in all; in this case, as in some others, Mr. Lukis has stated his measurements rightly on his plan, but has worked them out incorrectly; when properly put together his measurement of this circle, like my own, gives a diameter of 69 feet, which is exactly 33 cubits of 25·1 inches. The original number of stones in the eastern circle was most likely not 25, as Mr. Lukis has suggested, but 21, with an average interval of 10 feet from centre to centre; the western circle, judging from the spaces between the remaining stones, may have possessed only sixteen stones with an average interval of 14½ feet from centre to centre; none of the stones are more than 4½ feet high, and their width varies from 1 foot to 2 feet in the eastern circle, and from 2 feet to 3 feet in the other. Dr. Borlase, in 1738, said the eastern circle had seventeen stones standing (now only seven), two prostrate, and one broken off, and that its diameter was 23 paces, which at 3 feet to the pace gives 69 feet; in the western circle he found ten stones standing and four prostrate, and he estimated the diameter at 26 paces, or 78 feet; these diameters it will be observed are the same as I have deduced from independent observations. The remarkable and picturesque granite masses of Carn Kenidjack are 10 degrees east of north from these circles, and half a mile away; on Longstone Down, rather less than a mile off, in a direction 27 degrees north of east, is a menhir, of which Mr. Tregelles says the top is now just visible from the eastern circle over a hedge, but if that were removed it could be plainly seen, and, allowing for the height of the ridge, would be near the point of midsummer sunrise, though rather too far east; it would however fit the Beltane sunrise. A quarter of a mile from the circles, in a direction north-east by north, there is also a row, 53 feet long, of four holed stones, running north-east and south-west; they are all fallen, and, as I have not seen them all myself, I do not know whether, when they were upright, as they doubtless originally were, they were visible from the circles or not, but, as they would have been about 4 feet high, I should think they could have been seen from them.

The MEN-AN-TOL is on the moors, north of Lanyon Quoit. It is a stone about 3½ feet high and wide, and 1 foot thick, through the middle of which is a circular hole, 18 inches in diameter; about 8 feet from each side of this stone, in a line through the hole, 57 to 58 degrees east of north and west of south, is an upright stone 3 to 4 feet high, and there are two similar stones each about 38 feet west from the holed stone, one of which has fallen, and one on the east at about the same distance; this last stone is omitted in Mr. Lukis' plan, dated 1879, but was noted by me in 1869, by Mr. Dymond in 1876, and again by me in 1891. Mr. Dymond also found two other stones to the north-west, nearly buried, which neither Mr. Lukis nor I observed; it seems likely that all these formed part of a circle surrounding the holed stone and the two upright stones equidistant from it; a fallen stone which is lying by the western of these latter stones may have belonged to such a circle and have been removed to its present position. It has been suggested that there were here formerly two chambers, with the holed stone as a communication between them, and that the side stones, capstones, and earthen covering have all been removed, leaving only the middle and two end stones; there is no evidence in favour of this supposition, and the probabilities are greatly against it, especially as the two uprights are not at all like the usual endings of chambers, but are very like the pillar stones of the circles. With regard to the hole Mr. Lukis says that it has been made by picking away the opposite sides, but not equally, that this was obviously intentional, and that the deeper of the two sinkings being on the east suggests that its use, whatever it may have been, was from that side, and, if so, that "sun worship had nothing to do with the ceremony for the actor would have had to turn his back upon that luminary." Mr. Robert Hunt, however, says (in *Popular Romances of the West of England*, p. 415)—"the Holed Stone—Men-an-Tol—in Lanyon is commonly called by the peasantry the crickstone; through this the sufferer (from rickets or a crick in the back) was drawn nine times *against* the sun, or if a man, he was to crawl through the hole nine times." It seems therefore that Mr. Lukis was wrong both as to the direction from which the hole was used and in his consequent assumption that worship or rather observance of the sun had no place in the ceremony. Mr. W. C. Borlase cut a trench between these stones but discovered nothing but a fractured flint.

Near the Men-an-Tol is the MEN SCRYFFYS, a stone 6½ feet high by 1½ broad, and thick, on which is inscribed "Rialobran Cunoval Fil."

Not far from this is the BOSKEDNAN circle called, like so many others, the "Nine Maidens," though it consisted originally of not less than nineteen and perhaps of as many as thirty stones; its diameter is about 70 feet. There are now eight stones standing or leaning and three fallen, but Dr. Borlase figured thirteen standing and six fallen in 1769. Those remaining are from 4 to 6½ feet high, the tallest being about 30° west of north from the centre, and appearing to have formed one side of a special entrance. In nearly the same direction the summit of Carn Galva, a remarkable mass of granite, rises above and a short distance beyond the ridge which forms the horizon, this is the same direction as that of Skiddaw from the circle near Keswick in Cumberland, and, just as that circle has to the north-east the apparently triple summit of Blencathra, so the Boskednan circle has in the same direction a group of three little hills. At the south-east of the circle is a barrow about 33 feet in diameter and 3 feet high; it contained a cist, the contents of which had been scattered at an early and unknown period, but Mr. W. C. Borlase found near it the fragments of a sepulchral urn, provided with small cleats or handles, and ornamented with the usual twisted cord pattern; the edge of this barrow touched the south-eastern edge of the circle and perhaps even infringed upon it.

Two hundred yards or more to the north-west are the remains of a barrow about 34 feet in diameter, with two small stones near the centre, which may have formed part of a cist or chamber, and four more standing round the edge of the barrow, three at the south, 2½ to 3 feet high, and one at the north, 5 feet high; four others about 5 feet long are piled together at the west, probably removed from their original position with a view to taking them away altogether, for Mr. Blight described this circle in the *Gentleman's Magazine* for March, 1868, as possessing twelve stones.

Some distance north-east from this circle is ZENNOR QUOIT, returning from which to Penzance MULFRA QUOIT may also be seen. Both these were probably sepulchral chambers, but the capstones have slipped off, and lean against some of the supporting stones. Not far from Mulfra Quoit are the remains of a remarkable group of "beehive" chambers at CHRYSOISTER, Gulval; these have lost their roofs and some of the larger enclosures may not have been covered at all, though some of the smaller ones are known to have had "beehive" roofs formerly; in one of the chambers or enclosures is a peculiar stone basin. In plan there is a certain slight resemblance between these remains and those of Hagiar Kim in Malta, but it is probably only that kind of likeness which obtains between monuments belonging to a similar phase of culture. Hagiar Kim is for the most part constructed of upright stones set closely together. Chrysoister is made of dry masonry and its real connection is with similar remains in the Hebrides.

Coming eastward from Penzance a stop may be made at St. Erth Railway Station, from which the *Trencrom* or *Trecrobben* hill fort may easily be reached. It is situated on a high detached hill, and commands an extensive view from St. Michael's Mount or one side to St. Ives' Bay on the other; there are masses of natural rock on and around the top which are joined together by double walls of dry masonry, the space between the walls being filled in with earth and small stones and so formed into a continuous rampart. A friend had told me that he thought he had found a circle of thirteen stones in the centre of the interior quite perfect except that all but one had fallen; this seemed to me to be very important as establishing a more complete connection between the circles and camps than has as yet been shown to have existed, but the only circles that I could find upon the hill appeared to me to have been hut circles.

Another form of ancient dwelling, of which some examples are found in West Cornwall, is a long underground passage with little chambers opening out in it or from it; one of these, called the FOGOU, is not far from Dance Maen. No account of prehistoric remains in West Cornwall should omit to mention those on Carnbrae, near Redruth, but any description of them would be too long for the present occasion; full particulars with illustrations are, however, to be found in the *Journal of the Royal Institution of Cornwall.*

MISCELLANEA.

PROCEEDINGS OF THE ANTHROPOLOGICAL INSTITUTE, 1905.

January 10*th*, 1905.

Mr. H. **Balfour**, President, in the chair.

The election was announced of Mr. F. W. **Green** and the Rev. S. C. **Frere** as Ordinary Fellows of the Institute.

Mr. R. H. **Pye** and the Rev. H. N. **Hutchinson** were appointed auditors of the accounts for 1904.

Mr. M. **Longworth Dames** exhibited a collection of ethnographical objects from the N.W. frontier of India. The exhibit was discussed by Sir **Richard Temple**, Sir **Thomas Holdich**, Mr. **Ray**, Mr. **Lewis**, Mr. C. T. **Collyer** and the **President**.

Dr. H. D. **Kingston** exhibited a pot and stone celts discovered by Mr. H. Bartlett at Sa. Marta, Columbia. The exhibit was discussed by Sir **Thomas Holdich** and the **President**.

January 24*th*, 1905.

Annual Meeting (see page 1).

February 14*th*, 1905.

Prof. W. **Gowland**, President, in the chair.

Dr. A. C. **Haddon**, F.R.S., exhibited a number of lantern slides and cinematograph films illustrative of the ethnography and dances of New Guinea and the Torres Straits; and Dr. C. S. **Myers** sang a number of native songs, accompanying himself on the drum. The exhibit was discussed by Messrs. **Durand**, **Tabor**, **Gomme** and **Ray**, and Dr. **Haddon** replied.

Mr. E. B. **Haddon** read a paper on "The Dog-motive in Bornean Design" (p. 113), illustrated by lantern slides and specimens. Dr. **Haddon** added a few remarks. Questions were asked by Messrs. **Gomme** and **Kingston**.

February 28*th*, 1905.

Prof. W. **Gowland**, President, in the chair.

The election was announced of Mr. C. J. **Grist** as an Ordinary Fellow of the Institute.

Mr. N. W. **Thomas** read a paper on "Group Marriage in Australia." The paper was discussed by Dr. **Westermarck**, Dr. **Rivers** and Dr. **Seligmann**. Mr. **Thomas** replied.

March 14*th*, 1905.

In the absence of the President, on the motion of Mr. **Lewis**, Col. Sir **Thomas Holdich** took the chair.

The Rev. W. H. EDGELL read a paper on "The Manners and Customs of the Melanesians," illustrated by lantern slides and a number of ethnographical specimens. The paper was discussed by Dr. SELIGMANN, Mr. EDGE-PARTINGTON, Mr. LEWIS, Dr. GARSON, Mr. THOMAS, the TREASURER, and the CHAIRMAN.

April 4th, 1905.

Prof. W. GOWLAND, President, in the chair.

The election was announced of Mr. R. DURAND, Dr. J. MUSGROVE, Mr. C. SALAMAN, and Dr. E. WESTERMARCK as Ordinary Fellows of the Institute.

Mr. R. N. HALL read a paper on "The Fort and Slave-pits at Inyanga contrasted with Great Zimbabwe" (p. 92), illustrated by a number of lantern slides. The paper was discussed by Dr. HADDON, Dr. FELKIN, Mr. DURAND, Mr. LEWIS, Dr. GARSON and the PRESIDENT. Mr. HALL replied.

May 9th, 1905.

Dr. A. C. HADDON, F.R.S., ex-President, in the chair.

The election was announced of Mr. W. O. OLDMAN as an Ordinary Fellow of the Institute.

Colonel R. C. DELMÉ-RADCLIFFE read a paper on "Some Tribes of the Uganda Protectorate," illustrating his remarks with a large collection of ethnographical objects, photographs and lantern-slides.

The paper was discussed by Sir HARRY JOHNSTON, Dr. FELKIN, Mr. LEWIS and the CHAIRMAN, and Colonel DELMÉ-RADCLIFFE replied.

May 23rd, 1905.

Mr. A. L. LEWIS, Vice-President, in the chair.

The election was announced of Mr. E. B. HADDON and Capt. H. F. JACOB as Ordinary Fellows of the Institute.

Mr. FRANKLIN WHITE read a paper on "The Great Zimbabwe" (p. 39), illustrated by photographs and lantern slides. The paper was discussed by Mr. DURAND, Mr. CROSSLEY, Mr. NICOL BROWN, Mrs. COLQUHOUN and the CHAIRMAN, and Mr. WHITE replied.

June 20th, 1905.

Mr. F. W. RUDLER, ex-President, in the chair.

The election was announced of Mr. T. W. EDGE-PARTINGTON as an Ordinary Fellow of the Institute.

Mr. N. F. ROBARTS read a paper on "A recently discovered British Camp near Wallington" (p. 387), illustrated by a large collection of lantern slides and specimens. The paper was discussed by Mr. R. A. SMITH and Mr. LEWIS. Mr. ROBARTS replied.

Mr. A. L. LEWIS read a paper on "Prehistoric Remains in West Cornwall" (p. 427). The paper was discussed by the CHAIRMAN and Mr. GRAY.

November 21st, 1905.

Prof. W. GOWLAND, President, in the chair.

The election was announced of Mr. E. M. ANDREWS, Mr. C. ARNOLD, Mr. G. T. ATKINSON, Lieut. T. T. BEHRENS, Mr. A. DENCE, Sir CHARLES ELIOT, Mr. W. A.

GRAHAM, Dr. T. GOLLIER, Rev. Dr. HASTINGS, Prof. M. HAY, Mr. R. E. LARGE, Dr. R. H. MARTIN, Mr. T. E. SMURTHWAITE, Miss TENCH and Dr. B. W. WALKER as Ordinary Fellows of the Institute.

Mr. SMEATON CHASE exhibited, in the Library, a collection of photographs of Natives of Arizona.

Mr. M. BIDDER exhibited a collection of weapons, musical instruments and works of art from Siam.

Mr. N. W. THOMAS read a paper on "Boomerangs," illustrated by diagrams and specimens. The paper was discussed by Mr. NORMAN HARDY, Mr. KNOWLES, Mr. BALFOUR and the PRESIDENT.

The PRESIDENT announced that Prof. F. STARR had presented to the Institute a copy of his magnificent series of photographs of natives of Mexico, together with other publications.

December 5th, 1905.

Prof. W. GOWLAND, President, in the chair.

The election was announced of Mrs. EDWARD DAVIS, the Rev. H. J. DUKINFIELD-ASTLEY and Mr. P. A. TALBOT, as Ordinary Fellows of the Institute.

Mr. R. SHELFORD exhibited a Dyak Witch-Doctor's medicine chest, and explained the contents. The exhibit was discussed by Mr. BALFOUR, Mr. TABOR, Mr. THOMAS, Mr. LEWIS and the PRESIDENT.

Mr. D. RANDALL-MACIVER read a paper on "Ruins in Rhodesia," illustrated by lantern slides. The paper was discussed by Mr. BALFOUR, the TREASURER and the PRESIDENT, and Mr. MACIVER replied.

December 19th, 1905.

Prof. W. GOWLAND, President, in the chair.

The election was announced of Prof. K. von den STEINEN, Prof. F. STARR and Prof. S. TSUBOI as Honorary Fellows, and of Mr. H. PETERS BONE and Mr. W. MITCHELL as Ordinary Fellows, of the Institute.

Mr. S. HAZZLEDINE WARREN read a paper on "The Origin of 'Eolithic' Flints from Natural Causes" (p. 337), illustrated by specimens and experiments. The paper was discussed by Mr. J. RUSSELL LARKBY, Mr. F. J. BENNETT, Dr. H. C. VISICK, Rev. H. G. O. KENDALL, Mr. M. A. C. HINTON, Mr. A. S. KENNARD, Rev. R. A. BULLEN, Mr. A. J. HOGG, Mr. REGINALD SMITH and the PRESIDENT, and Mr. WARREN replied.

Archæological Researches in Costa Rica. By C. V. HARTMAN. Stockholm: Ivar Haegg Strömes Boktryckeri.

Museum collections and special publications derive their value from the character of the field-work on which they are based. Nowhere, not even in the studio, does skill, training, the touch of the master, count for more. Measured by such a standard, Mr. Hartman's publication cannot fail to be classed as one of exceptional value. It is with such material as he has furnished that we may some day hope to raise American archæology to the dignity of a real science.

In the growth or decay of art, industry, customs, religion, there must enter of necessity the time element. For this reason systems of relative chronology play a most important part in prehistoric Archæology. A careful, intelligent, thorough study, therefore, of the contents of graves is absolutely indispensable. *Archæological Researches in Costa Rica* is by no means confined to a study of burial places. Yet it describes in full more than 400 graves.

Mr. Hartman's field investigations were carried on during the years 1896–97. He began his researches on the East Coast with the great mound and walled enclosure at Mercedes. The mound is about 300 metres west of Rio Novillo; is truncated, with diameters at its base and top 30 and 20 metres respectively. The height, 65 metres, is the same as that of the surrounding wall. The purpose of the mound "seems to have been to serve as a platform, or temple, for the large statues, which were placed with faces towards the rising sun." The author suggests that a wooden structure with thatched roof may have covered the mound while the "flat stone walls apparently only served for enclosures." Four human figures and one of an alligator were found at the base of the large mound. One of the chief idols (Pl. XXXI, Fig. 1) wears a cap decorated with four (originally five) highly conventionalized animal figures in bas-relief (Fig. 1); and holds in its right hand a human head. These figures are all carved out of a hard basaltic lava.

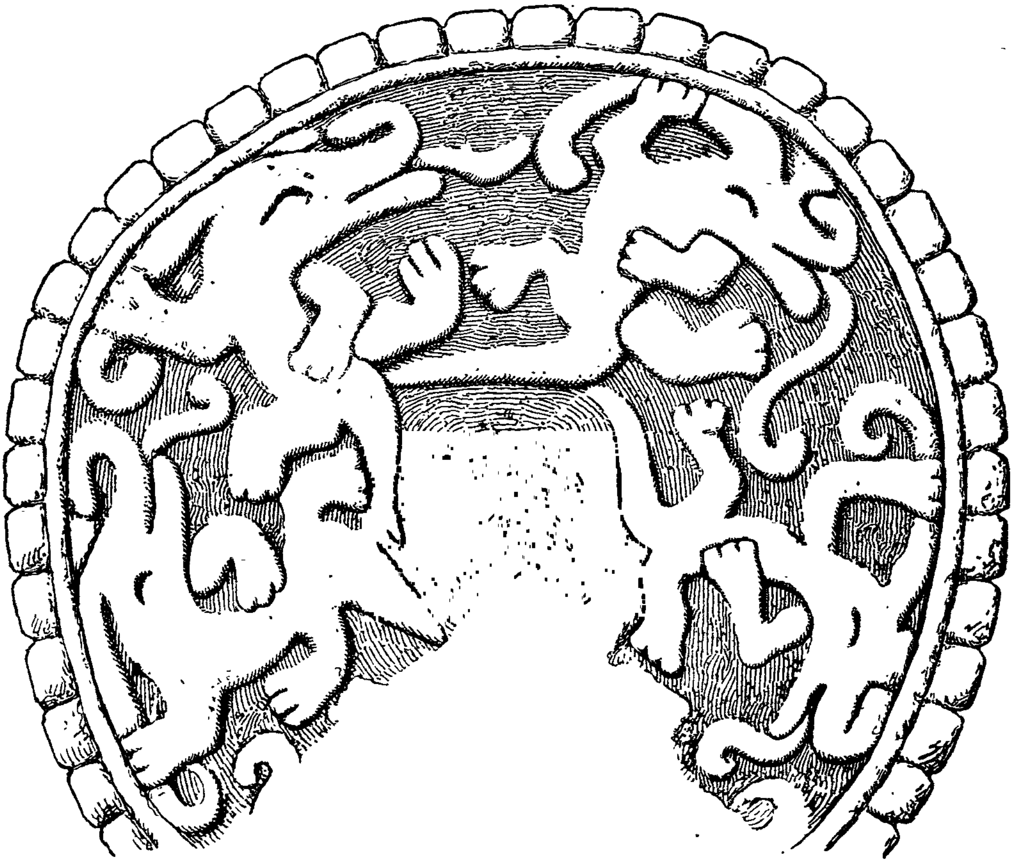

Fig. 1.—Decorated Cap of Idol.

A small mound at the end of the northern stone wall was also investigated; but neither that nor the large mound was completely explored. Near the top of the platform was found a human head of stone "which had been broken off from a trunk now missing." The vertex, or more correctly the cap worn on the head, is "engraved with a characteristic ornament, a kind of Swastika" (Fig. 2). Similar designs have been found by Holmes[1] on shell gorgets from Mississippi and Tennessee.

In the thick forest near the enclosure there were graves that had been opened previously. They were all of an oval or rectangular shape. Only after careful search in the "thorny thicket beneath the gigantic forest trees" hitherto undisturbed graves were discovered. "They were arranged in small groups inside a common and almost circular platform, or enclosure, usually about half a metre in height." Each enclosure was bounded by a margin of stones of various sizes. The groups, each containing from three to five graves are described. As regards construction, the graves at Mercedes all belong to one class. The walls are still in perfect condition except when interfered with by the roots of trees. Partially chipped limestone slabs form roof and floor.

Only one grave contained traces of bone. In most of them pottery was found. "The majority of these vessels show signs of wear, and are covered with soot, proving that they were employed as cooking utensils." Other objects found were charred corn and corn cobs, two stone celts and a bead of blue glass. This latter being of European manufacture, gives a clue to the age of the burials (not earlier than the sixteenth century). In these regions it has been the custom to bury the dead inside the houses, so that in all probability the low platform enclosures, containing the graves described, were primarily foundations for the huts of the living.

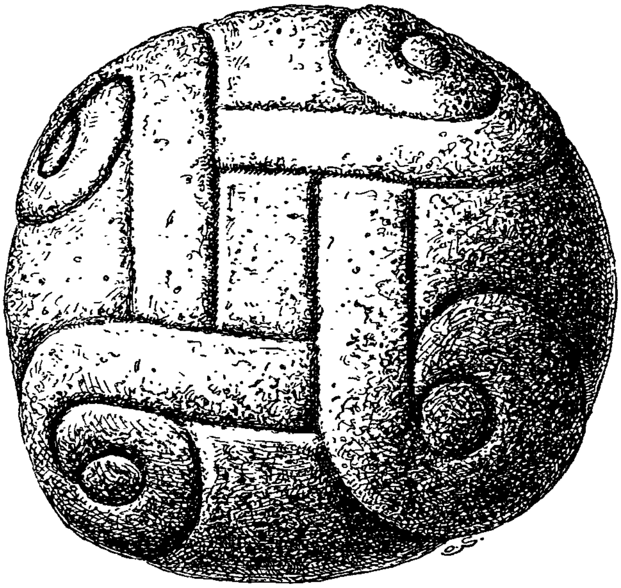

FIG. 2.—SWASTIKA ORNAMENT ON CAP.

A curious discovery was made about 100 m. from the temple mound, where the "rains had swept away the humus and uncovered a small portion of the roof of a stone chamber containing a lot of pottery, but there was no proof that it had been used as a grave." The construction of the chamber, which differed in several respects from the graves, and the amount of pottery contained therein, lead the author to look upon it as a cache.

Not the least interesting find made in the neighbourhood of Mercedes was a stone-cutter's workshop. It was discovered by chance while opening forest paths in search of graves. "Over a surface of some 20 square metres, and to a depth of about one metre, the soil was intermingled with chips and partly-finished idols."[2]

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[1] *Second Annual Report, Bur. of Ethnol.*, 282, 284.

[2] It was for his work on the East Coast that the Loubat prize was awarded to Mr. Hartman by the Swedish Academy of Literature, History and Antiquities.

Rains making work on the Atlantic lowlands practically impossible, the highland valleys of the interior were chosen as a field of exploration, but not before investigating a number of sites known to the occupants of the neighbouring haciendas. These included a stone enclosure at Williamsburg, and graves at Siquirres, Sta. Rosa, Guasimo and Jimenez.

As to work in the highlands, the valley of Cartago was selected as the most promising. Near Santiago, twelve stone cists and as many grave pits were found in a flat elliptical mound, the cists being arranged in the eastern half of the mound and the pits in the western half. The latter differ in construction from the cists, being bowl-shaped and formed of cobble stones. The cists were all quadrangular with "roof, sides and bottom composed of thin slabs of limestone." In both forms of grave a number of objects, chiefly pottery, were found. The most important piece (Pl. XXXI, Fig. 2) is a ewer-shaped vase with "handle representing a conventionalized animal" (probably tapir).

There were no traces of bones. The graves were not long enough to admit of adult burial at full length. It is presumed that these graves were used as repositories for the bones only after removal of the soft parts by decomposition or other means, a presumption which is strengthened by the fact that "quite small stone cists were found in several places to contain remnants of skeletons, which had been apparently deposited in them in bundles."

The vessels in the Santiago stone cists were as a rule well preserved; few bore marks of use. In fact, only a few are large enough to admit of practical use. They are probably symbols of larger vessels. Later researches on the Pacific coast brought to light a quantity of diminutive mortuary vessels.

At Chircot, a suburb of Cartago, the ancient capital of Costa Rica, was found "a really extensive ancient burial ground that had been left almost undisturbed." Only the superficial part of the enclosing stone circle had been removed by cultivators of the soil. Here 205 graves were "crowded together in a small oblong space," 20 metres long by 15 in breadth. They were arranged in three layers, 111 in the upper, 59 in the middle and 35 in the lower. The cists of the lower, or oldest layer, were in three groups; those of the middle layer, in four groups; while the cists of the top layer were about evenly distributed over the whole burial ground.

The Chircot cists were in shape like those at Santiago, and many were diminutive in size. In most of the cists that were of sufficient length, the "skeletons lay stretched out on their backs at full length." In the small cists, the bones, when present, were in heaps or bundles, and often did not represent the entire skeleton. The skulls, were dolichocephalic.

The mortuary vessels were not always in the cists. Many were found just outside usually at the head of the grave, and, in a few cases, on the roof. Of the relics deposited inside the cists, the majority were in the vicinity of the head and trunk; a few were near the feet.

About 50 metres east of the first burying ground, a second, somewhat smaller, was found. It had been demolished in part. The cists that remained were similar to those of the first field, and arranged in two or three layers. In the small cists were "fragments of skeletons deposited in bundles, usually one in each cist, but in some, two or three."

At Los Limones, six kilometres from Cartago, two elliptical mounds were found. They were not more than a metre high at the centre, and the stone margins, if they ever existed, had disappeared.

There were 26 cists in the first mound and 39 in the second. The graves were of the same construction as those at Chircot, and were, for the most part, without artifacts. Stone objects were especially rare.

Orosi, the next site investigated, is in the mountains, some 10 kilometres south-east of Cartago. It is an ancient dwelling-place that was selected because of a desirable water supply and adjacent stone quarries. The general ground-plan shows a number of circles and semicircles, bordered by stones and varying in size from 8 or 10 to 20 metres in diameter. In the midst of these is a rectangular space 27 metres long by 17 broad, surrounded by low embankments—probably an open courtyard.

Five of the stone enclosures containing graves were excavated by Mr. Hartman. In a cist of Group I, he found an obsidian flake—"the only object of obsidian met with during all the excavations in the highlands." Obsidian is also rare on the Pacific side, the author finding "not even a single chip of obsidian" during his excavations there.

The most prominent stone circle at Orosi is the one marked V on the plan. Of the large number of stone cists, sixty-five were excavated, which proved it to be the richest in relics of any of the highland mounds. The graves were distributed in two layers, each layer containing three groups.

Mound V, like all the other stone enclosures at Orosi, was primarily a domicile; but it differed from most of the other hut-rings in having served for a time as a burying ground. In filling up the cists, the ancient inhabitants had carelessly "thrown in any stones and pebbles contained in the soil, and thus many chips and partially worked stone implements found their way into the cists without having been purposely deposited there."

A number of sporadic finds were made in the soil that covered the graves, the most important being "a defective seal, provided with a small handle."

About a thousand stone objects were collected from a neighbouring coffee plantation, where a number of partially demolished stone circles were still visible. In one of the cists opened, a golden bell was found; in another, two small tubes of rolled copper. Here stood also an upright stone slab with petroglyphs.

Mr. Hartman supplemented his own rich finds by the purchase of private collections from the environs of Cartago, the largest of these coming from Las Huacas, Navarro, Tarros and Agua Caliente.

The volume represents the results of a year's scientific investigations carried on first along the Atlantic lowlands and later among the highlands of the interior. The culture is everywhere "that of a Stone Age people of high standing, possessed of ornaments of gold and copper, but with no tools or weapons of metal at all." No date can be fixed for the beginning of this culture: but that it continued to exist after the arrival of the Spaniards is attested by the presence of glass beads in some of the graves.

Of native artifacts, only two implements of bone were found. The remainder were of clay, stone or metal (gold and copper ornaments only). The great majority of the clay vessels were evidently intended for mortuary purposes alone. They testify to a "highly elaborated technique and cultivated taste," but do not include any types that are equal to the best there is in Chiriqui ceramics.

Two types of ornamentation are particularly noticeable: (1) incised geometric designs as seen on a clay vessel from Chircot (Fig. 3 and Pl. XXXII, Fig. 1); and (2) punctate knobs resembling raised tattoo marks or scarifications, as illustrated by a large tripod bowl, also from Chircot (Pl. XXXII, Figs. 2 and 3). The author observes "that certain classes of ornament seem to have been allotted to certain classes of vessels."

The Ancient Guëtares of Costa Rica seem to have excelled in the manufacture of large, multicoloured bowls, a number of which have been reproduced in colour, thus adding attractiveness to what even without them would be a superb series of plates.

The large quarto volume contains 488 text illustrations in addition to the 87 plates. It is published at the sole expense of Mr. Åke Sjörgren, who has also given the collection, on a part of which the work is based, to the Royal Ethnographical Museum in Stockholm. Ever since the time of Thomsen and of Worsaae, the world has been accustomed to look to Scandinavia for light and leading in the realm of prehistoric archæology. To Mr. Hartman belongs the credit of transplanting to American soil the seeds which have borne such excellent harvests in Denmark, Norway and Sweden. May he have abundant opportunity to do field-work of the same high grade for the Carnegie Museum as that which he did, through the munificence of Mr. Sjörgren, for the Swedish Museum.

FIG. 3.—CLAY VESSEL FROM CHIRCOT.

GEORGE GRANT MACCURDY.

Yale University Museum,
New Haven, Conn.

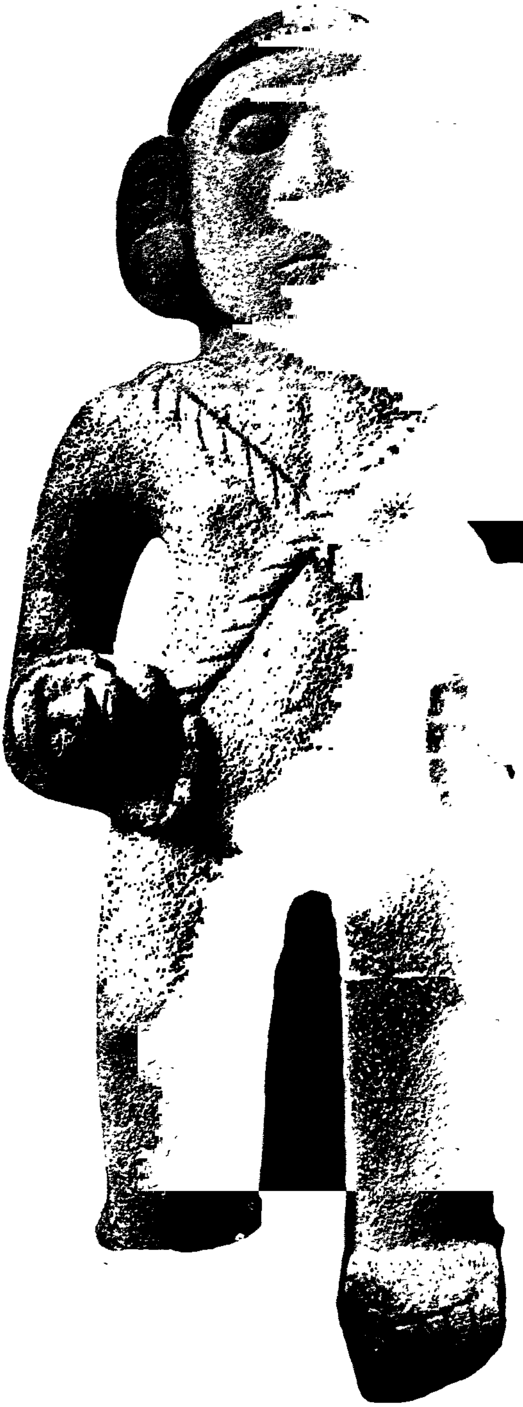

FIG. 1.—IDOL FROM MERCEDES.

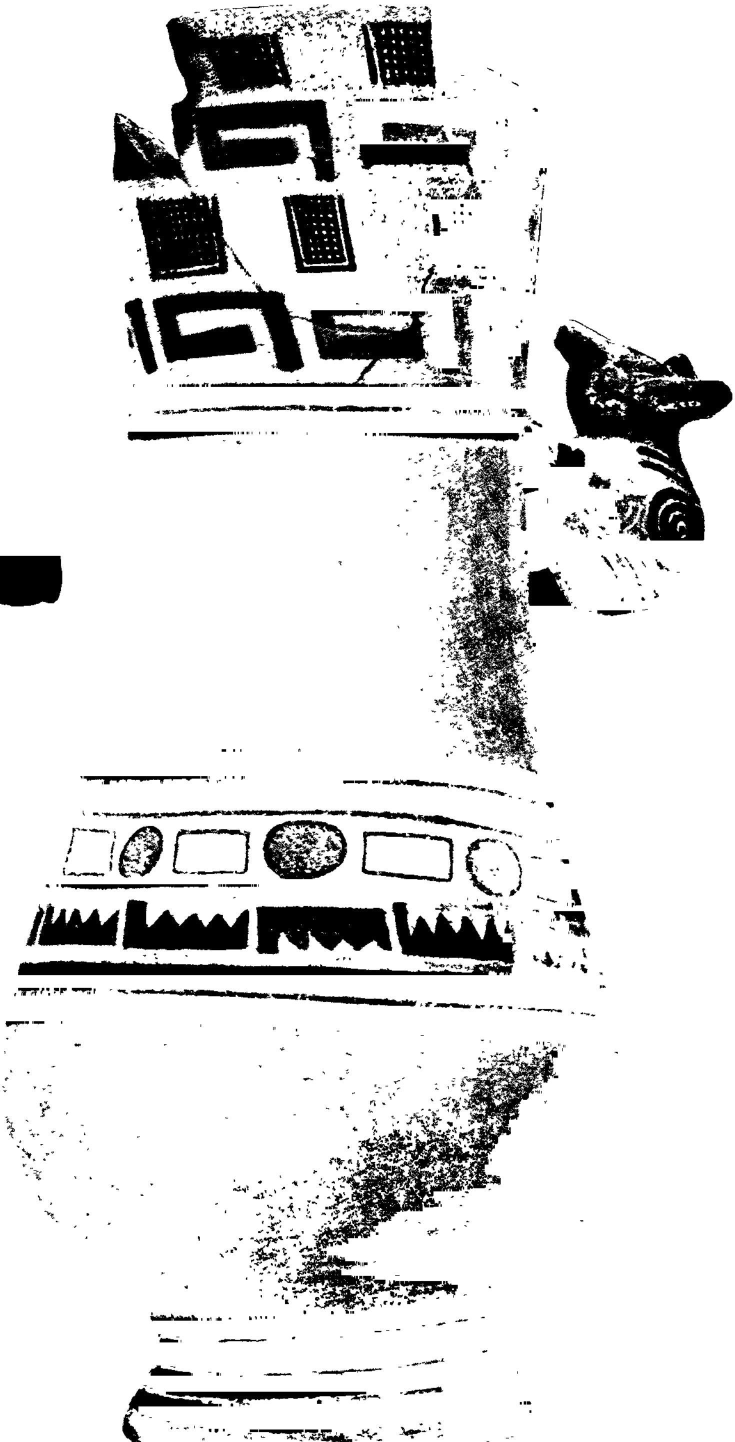

FIG. 2.—EWER-SHAPED VASE.

ARCHÆOLOGICAL RESEARCHES IN COSTA RICA.

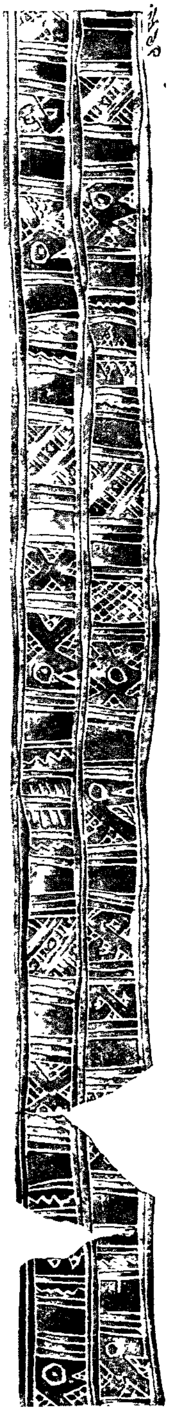

FIG. 1.—DETAIL OF ORNAMENT ON CLAY VESSEL FROM CHIRCOT.

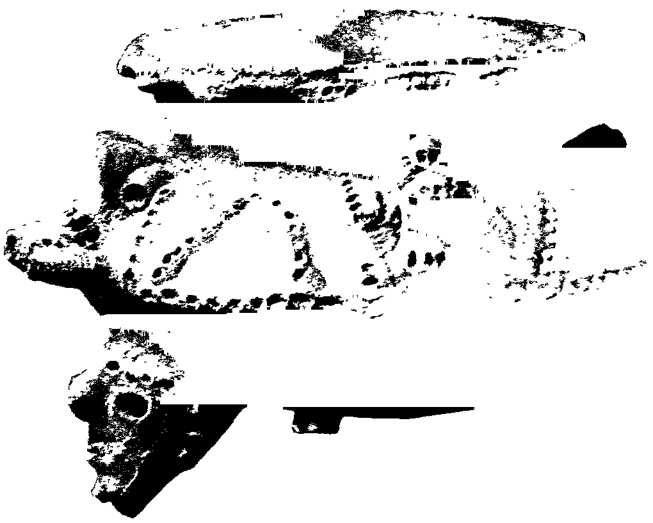

FIG. 2.—TRIPOD BOWL FROM CHIRCOT.

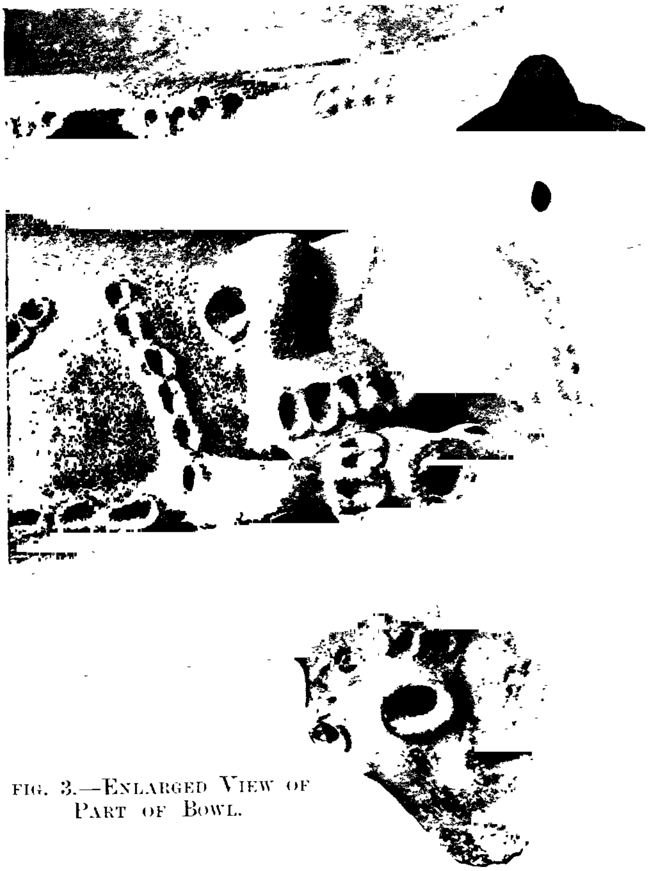

FIG. 3.—ENLARGED VIEW OF PART OF BOWL.

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